The Journal of Educational Method

VOLUME I NOVEMBER, 1921 NUMBER 3

EDITORIALLY SPEAKING

WHAT'S IN A NAME?

As was to be expected, some of our contemporaries are more or less puzzled by our use of the words Educational Method. "Method is the way teachers proceed, isn't it? Why then do you include in your journal articles which evidently are intended primarily for those who supervise teachers?" Why indeed? Because if supervision is ever to come into its own it must have "methods" too. And it is precisely because the principles of method that should guide the supervisor are the same as those which should guide the teacher that the discussion of the two functions should proceed side by side. If supervision were merely scientific management or inspection or bossing the job, then truly it would have but little in common with the art of teaching. But since it has to do with constructive leadership and guidance as well as organization and coördination of effort of those who are or should be seeking to improve, the analogy is a true one. There is besides this justification, namely, that example is more powerful than precept. Supervisors who know how to stimulate and direct effective group activity among their teachers actually develop good teaching methods by doing so. The term Educational Method is a fit one to designate the entire body of principles which underlie all modern school practice.

INTERNATIONAL RELATIONS

Much interest attaches to the appointment by the National Education Association of a committee whose chief immediate function is to organize and conduct an international conference on education. There are great possibilities in the idea. Americans will do well to enter into the conference, however, with two very definite purposes, first, to be more eager to receive than to give and, second, not to propose any joint enterprises which we are not fully resolved to carry out to the bitter end. Our self-assurance is amusing and sometimes annoying to Europeans, who pardon it as characteristic of youth and immaturity. As for starting things and then going off and leaving them, that practice is thought by many of our friends abroad to be our established custom. A few good plans consistently followed up for many years would do much to improve our reputation abroad.

Annual meeting of the National Conference on Educational Method, Chicago, Ill., February 28 and March 1, 1922

HOW THE TEXTBOOK MAY AID THE TEACHER IN GETTING PROJECTS TO GOING

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The term *project* as it has come to be used in the field of education has two aspects. First, it is a term used to define or describe a *method* of acquiring facts, skills, habits, ideals, or interests, a *method* of modifying behavior, or conduct. From this aspect it emphasizes learning through meaningful, or purposeful, rather than through purposeless activities. Purposeful acts may, however, result in modifying behavior in either a desirable or an undesirable direction. Activities in which one engages with the utmost wholeheartedness may modify behavior in a bad direction if the facts, habits, or ideals that are established are socially undesirable. For instance, a bandit holding up a train may be pursuing wholeheartedly an activity that is purposeful but that is undeniably non-social and consequently not an educative project. It would be a great mistake to assume that wholehearted or purposeful activity, *per se*, is the key to the solution of the problem of preparing for the development of truly social beings in our democratic society. Very definite social objectives in facts, habits, ideals and attitudes that are to be realized as the end of all activities and relationships in school life must be held in mind in all discussions of the project as a method of organization, and all school activities must be judged valuable or otherwise in accordance with the degree in which they lead to the realization of these social objectives.

In order to evaluate the textbook in getting projects going it is important to consider both requirements for the *educative project:* the content presented in the text, as well as the method of organizing such content. It may be argued by some that the function of a textbook is to present content only and that any discussion of method in connection with a textbook is irrelevant. Every textbook, however, does present *some* method of teaching. The subject matter, or content side of every text must be presented in some organized fashion, and since the order in which facts are organized is an important element in method, every textbook does emphasize a method and every variation in the textbook organization of content in relation to the learner's experience is a variation in method. The project method demands an organization that takes as its basis, or starting point, an activity clearly related to the learner's present life needs and purposes. It demands that this relationship be clearly shown, not implied, so that the learner may (1) enter wholeheartedly into the activity, (2) determine in the light of this relationship the proper steps to be taken in carrying out the activity to its conclusion, (3) appreciate the amount of emphasis, practice, or drill each step should receive, (4) have a clear indication of the goal that is to be reached.

Any textbook that organizes its subject matter around activities that are closely

related to the purposes of the learner at the stage of development for which the text is designed, that shows the relationship of the facts to be learned, or of the habits or skills to be acquired, to this activity, and that sets up a definite and specific goal in the light of this activity seems to be pointing the way to securing purposeful activity. On the other hand, every textbook that organizes subject matter, however valuable, in such a manner as to ignore these principles is encouraging purposeless activity. I am aware that in the hands of a skillful, well-trained teacher the latter kind of a textbook may be made valuable, but the rank and file of teachers too frequently follow the organization suggested in the text, which at present is usually some logical scheme that appeals to the author but that is so remote from the mind of the learner that he is not likely to see any connection with his own aims and purposes.

The inability to see the value of textbook content on account of the current method of textbook organization of content is more marked among immature learners in the elementary school than among more mature students. Nevertheless, I was greatly impressed recently with the enthusiasm shown toward the study of educational psychology by a class of college students preparing for teaching, who used as a textbook a psychology whose subject matter is organized about problems the solution of which college students can appreciate as having significance for a teacher. Their interest in the subject and the amount of work done by the class in addition to the assigned work far exceeded what I had found in previous classes, where the text employed had followed the more usual organization of psychology texts—discussions in order of sensation, perception, imagination, memory, reasoning, and the like. I am not implying that a psychology textbook organized on a topical basis has no value. Its chief value, it seems to me, is as a reference rather than as a textbook. I believe that there is a distinct place for two kinds of books for class use. One should be of the encyclopedic kind, compiled by authorities on the subject matter involved, and designed to be used only for reference, another arranged by students of educational methods and intended for textbook use.

Professor Harold O. Rugg, in a recent discussion entitled "How Shall We Reconstruct the Social School Curriculum," expresses the opinion that one of the reasons why the old correlation movement failed to be effective in securing the organization of related materials in one body of subject matter rather than in separate compartments was "because there were no systems of textbooks in which the correlation was worked out."[1] It seems to me that the advocates of the project method will be equally handicapped in their efforts to improve classroom teaching until the writers of textbooks show an appreciation of the importance of the organization of subject matter from the standpoint of activities that are meaningful and vital to those for whom the text is designed.

Recently I spent some time going through arithmetic texts for primary

[1] **Rugg**: *The Historical Outlook*, May, 1921, Vol. XII, No. 5.

grades evaluating the activities suggested from the standpoint of purposes appealing to primary children. I was forced to the conclusion that children who used the texts examined would undoubtedly develop the attitude that arithmetic has little value in their lives. "Write figures from 1 to 20," says a text. What for? How is a child to know when he has written his figures satisfactorily? What is the goal in accuracy or perfection desired? There is nothing in the text to indicate. "To write digits till one's chubby hand aches and then to be told to take one's sponge and rub them out seems very hard," Emmy Lou once remarked.[2] The pity of it is that the majority of "Emmy Lous" become so accustomed to doing things in school the purpose of which they cannot understand that they become too stultified even to question, "What for?"

Purposeful activity always has some very definite goal to be attained. Furthermore, the goal it represents is a possible one, and you should know when you have reached it. When, for example, a child sets out to make a wagon, he wants a wagon that is made well enough to run when pushed, or one that a child can ride in, or one in which he can transport something—a wagon that is made well enough to be satisfactory for some definite purpose. The particular purpose he has in mind determines just how accurate and how careful he must be in making the wagon. But in following such directions as, "Write figures from 1 to 20," he might go on writing figures day after day and never know when he had written them satisfactorily enough. In carrying on to completion many projects which appeal to children as meaningful, writing figures from 1 to 20 is involved. The degree of accuracy that is necessary, however, differs with each project. The particular goal to be reached may demand the writing of *one* figure half a dozen times until it is satisfactory for the purpose, or may be satisfactorily attained by the first writing.

As I proceeded in my examination of arithmetic texts I found, "Draw a line six inches long." "With a ruler measure the top of your desk." "Measure the width of the door." "Measure the length of the blackboard." Just measuring for the sake of measuring! "Count the pieces of chalk in the chalk box." "Count all the panes of glass in your schoolroom windows." "Count all the objects in the room." This meaningless counting and measuring may be defended by some teachers on the ground that children like to do it. Professor Dewey, in discussing the meaningless activities in which children are asked to indulge, says: "I frequently hear deadly devices extolled on the ground that children take so much interest in them. Yes, that is the pity of it. The mind cut off from worthy employ must take relief in what is left."

Outside of the school and away from school a child engages in counting and measuring not in order to carry out artificial activities but because of some worth-while purpose. He measures in order to make a house, or a box, or a cage, or a card, or something that he wants to use in a definite way. He measures with just the degree of accuracy that is necessary in order to get

[2] George Madden Martin, *Emmy Lou*.

the result that he is after and the degree of accuracy varies, of course, with his purpose. To measure accurately to a quarter of an inch when a measure to the nearest inch would be satisfactory, as it frequently is in life situations, is certainly a waste of time and an inefficient method of measuring. Measuring everything in the classroom for the sake of learning to measure and with no other purpose not only encourages meaningless activity but also develops inefficient habits of measuring. If a child is measuring in order to make cards necessary for playing a game, or to make tickets of admission to a play, he has some real reason for measuring and he not only knows the degree of perfection necessary in his measuring, but also knows when he has accomplished a satisfactory result. Such activities should be used as the basis of organization for acquiring knowledge and skill in measuring.

The use of significant projects as a basis for organization of subject matter means a distinct reorganization of the material of present-day texts. It means that children's experiences must be taken into consideration in our organization to a much greater extent than at present. A child's experience with time, for example, does not come in any such orderly fashion as the order given in many textbooks suggests. He can appreciate, because of his experiences, the fact that a week is made up of seven days long before he has a basis in experience for "sixty seconds make a minute" or "sixty minutes make an hour."

There will be, I think, two arguments advanced against the organization of subject matter in texts around projects. One will be advanced by those opposed to projects as a method of teaching on the ground that the utilization of children's purposeful activities as a basis for organization will necessitate the omission of content that should be taught because of social demands. But any content that is socially desirable is so because it is a part of significant social activities. In so far as these activities are a part of the world in which children move as well as adults, children's interest in them will be limited only by their ability to comprehend them. A more pertinent objection that may be made against the organization of textbooks about significant projects will come from the advocates of the project as a method of teaching. Their objection to selected projects in textbooks will be that projects to be really significant as a means of setting up purposeful activity should originate with the learner and that a text organized about projects destroys the very essence of purposeful activity by determining the activity that is to be used in securing the desired content. Professor Dewey's discussion of this point is illuminating to me. He says: "There is no ground for believing that the teacher should never suggest anything. The wise teacher is very much more likely than the child to know what his own interests and impulses mean. But the suggestion must fit in with the child's dominating mode of growth."[3]

It seems to me that many of children's most purposeful activities are suggested by other children, by parents, by teach-

[3] Dewey, *School and the Child.*

ers, or by other adults. The activity of going to school *at all* is suggested by others, but that does not mean that the child does not enter into it wholeheartedly.

I believe that if all textbooks were organized exclusively on a project basis, and the projects used were ones which children of about the same stage of development had really initiated and carried through, there would be more rather than less *initiation* of purposeful activity on the part of children than we have at present. It seems to me much better to have children following a text and carrying on activities the purpose of which they can understand, even though the activity was suggested by some one else, than to have them doing things the purpose of which they cannot understand and which have no significance in their lives.

THE GRADING AND PROMOTION OF PUPILS

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Much attention has been paid to the problem of the grading and promotion of pupils during the last few years, and rightly, since it is intimately connected with questions of school costs, medical treatment, curricula, school plant, etc. *Laggards in Our Schools* by Ayres and the many comments in school surveys on age-grade tables have given us one side of this by pointing out the existence of the problem. Little has been done, however, on the other sides of it—correction and, more important still, prevention.

This problem and its solution is essentially a recognition of the problem of individual differences and provision for them, with the necessity of class teaching also being taken into account. The many measurements made of performance and intelligence by Courtis, Terman, and a host of others all tend to point out the great range and variety of such differences. The tendency in the past has been to consider differences in class work and in progress made through the grades as due largely to differences in health, attendance, etc., rather than to differences in natural ability.

At present educators are satisfied that the great range in progress made by different children is due largely to differences in ability, and especial importance must be attached to this difference since it is the factor which is least easily changed—in fact practically does not change at all. If a child is lacking in application to study, it is usually possible for the teacher to secure better effort, and even "school attitude," which has been shown by Pressey, writing in the *Elementary School Journal*, to be very important, may be changed, but native intelligence seems to be the one thing which the teacher cannot influence or improve. At the same time, it must be borne in mind that very few people make use of their maximum of ability

and hence nearly all of us may hope to surpass anything we have done so far if we will only make full use of what nature has given us.

In passing, it might be said that school progress does correlate much more highly with mental age than is indicated by Pressey's results. He worked with only one grade, Grade VII. The differences in mental level were slight compared with the whole range of differences possible, but no doubt practically the whole range of differences in school attitude were present. Naturally differences in scholarship found were caused more by the great differences in school attitude than by the comparatively slight differences in mental level. His experiment shows that differences in class work within a grade, where differences in mental level are comparatively small, are due, to a very considerable extent, to differences in school attitude.

Up to the present the measurement of intelligence has been largely in the hands of trained psychologists, who could measure very well indeed but who were usually satisfied with locating a few feeble-minded children and recommending an occasional extra promotion. The results that have been obtained from the use of the measurement of intelligence as applied in most school systems are disappointing in the extreme, because workers have been content to measure, tabulate figures, and make graphs, and have stopped without doing any follow-up work of value. Of course this work is that of the school administrator rather than that of the psychologist, but so far the work of the psychologists in mental measurement has been almost totally fruitless.

An account of what has been done in one school system might give a better idea of the possibilities of mental measurement follow-up work. The Alexander Taylor school has about five hundred and fifty pupils in seventeen rooms. Grades I–VIII, and three other small schools, containing in all nine rooms, send nearly all of their pupils to Alexander Taylor at the end of Grade V. It is compulsory to attend school until the age of fifteen years. The course of study and the grading is very much like that of some of the eastern states. About a third of the pupils are foreign—Hebrew, Russian, German and Austrian, mainly. The school year contains 190 to 195 days.

During the last four years the intelligence of nearly all of the children in the school has been measured. The average I.Q. is about one hundred for the English-speaking, non-foreign part of the school, though most of the schools of the city must exceed this level considerably. As in practically every school on the continent, many of the pupils of average intelligence had, through irregular attendance, sickness, careless grading, poor teaching, etc., lost a year; many others who were bright had not reaped any advantage in the way of extra promotions from ability and so had in many cases grown lazy and indifferent, so much so in fact, that they were very often not recognized as bright by their teachers; finally some who were slow had been carried along to grades where they were not capable of doing the work. The following table of mental age and grade shows the condition that existed September 1, 1920, after the promotion, etc., of those who were present at the end of

June. Only the English-speaking children of English descent are taken in in this table.

Mental Age	Grade									Total
	1	2	3	4	5	6	7	8	9	
4	2	....	....	....	....	....	....	....	....	2
5	5	1	1	....	....	....	....	....	....	7
6	4	7	2	....	....	....	....	....	....	13
7	3	19	9	....	....	....	....	....	....	31
8	....	12	21	8	1	....	....	....	....	42
9	....	2	4	19	4	2	....	....	....	31
10	....	....	2	8	20	6	4	....	....	40
11	....	....	....	1	7	14	14	6	....	42
12	....	....	....	....	1	11	18	4	2	36
13	....	....	....	....	....	2	11	17	7	37
14	....	....	....	....	....	....	5	15	8	28
15	....	....	....	....	....	....	1	6	8	15
16	....	....	....	....	....	....	....	3	6	9
17	....	....	....	....	....	....	....	1	....	1
Total	14	41	39	36	33	35	53	52	31	334

This gives a correlation between mental level and grade of .92, a much higher figure than Pressey got. If the fact that all in one grade were not equally far advanced were taken into account, this figure would no doubt be slightly changed and would probably be somewhat higher.

The follow-up work based on the condition found here consists of: (1) extra promotions for some pupils; (2) retardation or demotion of others; (3) proper placing of new pupils; (4) especial care taken to make sure that, as pupils enter Grade I and come up through the grades, the condition at present existing will not be repeated.

Many pupils who were below the grade their mental age would appear to warrant were given extra promotions either by being left only a half-year in each of two successive grades or by being promoted from, for example, Grade VI in June to Grade VIII in September. During the school year 1919–20, seventy-three pupils in the Alexander Taylor School received extra promotions. Only one of these pupils failed of promotion at the end of June, 1920. From September 1, 1920, to March 1, 1921, about eighty-five pupils have been given extra promotions on the basis of intelligence, class work, etc. Of these all but three or four are doing satisfactory work.

Pupils who come in from other schools are placed by taking account of their former standing and their mental level. Some are moved up a grade, others down a grade, and still others saved from demotion when they do not appear to be doing satisfactory work but the mental test shows the probability of their soon doing so. A mental level of about 12 years 9 months to 14 years 3 months is considered about right for Grade VIII at the beginning of the school year, September 1; 11 years 9 months to 13 years 3 months for Grade VII, etc. Since the test was first used it has been the important or deciding factor in about 110 extra promotions and has been a means of saving about 100 children from demotion or non-promotion. Few mistakes, in fact practically none, have been made by promoting too rapidly, but doubtless many have been made by our being too cautious.

The over-age in the school has been cut down from 42 per cent to 29 per cent, counting as over-age all pupils who are more than 7 years 3 months of age when they begin Grade I or more than 14 years 3 months when they begin Grade VIII, etc. In other words, the average time required to complete eight grades has been cut down by slightly over one year. Very careful standard tests show that the work of the school has improved about 7 per cent at the same time as the grading, and, in addition to this, the

classes are more closely grouped around the median scores. (The scores made are for Grade VI about the same as or somewhat better than the standards set by Courtis and others for Grade VII, etc.) On a test in arithmetic given last spring by the provincial inspector, one of the Grade VIII classes in the Alexander Taylor school scored the highest of any Grade VIII in the city and the other Grade VIII in the school was very little lower. Definite, pointed supervision, applied as follow-up work after standard tests have revealed class weaknesses, has more than balanced the effect of rapid promotion on class attainment.

It must be kept in mind, however, that energy, persistence, regularity of attendance, class work, health, school attitude, etc., are important factors to be considered in grading. Intelligence is probably as important as all the other factors combined, and, since it is practically beyond the influence or control of the teacher and changes relatively little, is more basic. The teacher may overcome defective application on the part of the pupil but can scarcely overcome the handicap of defective mentality. If a pupil is not doing well in class, the reason should be found and proper remedies applied. If poor work is due to a lack of ability and the pupil is really doing as well as he can, he is encouraged and made to feel that he is coming on all right, but if he is found to be bright and lazy, steps are taken to bring about a change. Often the simple statement that he is not doing well, though he is bright and capable of good work and must do better, is sufficient to produce considerable improvement. It is well to remember that few pupils attain at all nearly to the success their mentality would warrant. This, no doubt, accounts for the occasional case where a pupil of average ability does excellent work or a pupil of poor ability does average work.

At present the following are being used as guide lines to aid, not as rules to be slavishly followed. Pupils who have completed Grade VI in June may be promoted to Grade VIII in September: (1) if mental age, September 1, is 14 years 3 months or above and they are in the upper 69 per cent of the class in the June tests; (2) if mental age is 13 years 9 months to 14 years 2 months and they are in the upper 31 per cent of the class; (3) if mental age is 13 years 3 months to 13 years 8 months and they are in the upper 7 per cent of the class.

Grades III, IV, and V are treated similarly except that in Grade VI 12 years 9 months is substituted for 14 years 3 months in Grade VIII, etc., and the six-month interval used for Grade VI is cut to 5 months for Grade IV and to 4 months for Grade III. (Common sense is needed in applying these standards. Common sense here has the usual meaning, uncommon sense.)

The following regression equation has been developed to indicate the probable marks in Grade VIII of a pupil who is skipped from Grade VI:

$$M = .2025X + 2.5276Y + 2.2686Z - 9,$$

where M is the Grade VIII marks, X is the Grade VI marks, Y the I.Q., and Z the spelling marks in Grade VI. For an explanation of the method of developing this, any good work on educational statistics may be consulted. It is, of course, not useful except in the system where it has been developed, but if a number of cases are taken a similar

equation may be developed for any system.

The brighter pupils who enter Grade I in February complete Grade I and Grade II in one and one-half years; the duller ones are given a good grounding by putting one and one-half years in Grade I.

Skipping grades is, however, at best only a makeshift. The grading, from the time pupils enter school, should be handled so that pupils do not get behind the grade they should be in. To obtain all the advantages and none of the disadvantages of skipping grades, school systems with large schools should provide an eight-year course of study for pupils of I.Q. about 93–107, the average pupils; a nine-year course, with less academic and more manual work, for pupils of I.Q. about 78–92; and a seven-year course, somewhat enriched, for pupils of about I.Q. 108–122. Pupils above 122 I.Q. and below 78 I.Q. might well be given special ungraded classes. It seems obvious that a child who will require nine years in public school would do better to take one-ninth of the course per year than to fail once, take one year's work twice, and cover the other years' work at too rapid a rate for his understanding. Pupils should not of course enter Grade I until their mental level is at least 6 years 0 months, regardless of their actual age.

The feeble-minded are not at all the important school problem they have been painted. (Like nearly all schools of five hundred to six hundred pupils, we have ten to fifteen of them all the time.) They usually give little trouble but make very little returns for the money spent on them. A little school work of a drill nature in reading, writing, etc., and manual work can be taught them. The girls had best be looked after by a good, kind, motherly woman, not necessarily a teacher, who will teach them a little housework, sewing, etc. They should, of course, be segregated after the age of puberty. The feeble-minded are a very minor part of the problem of school grading and their detection one of the less important uses of the mental test.

The pupils in a school system should be measured by means of the National Research Group Intelligence tests, published by the World Book Company, Yonkers, New York, as early in September as possible if they have not been tested before. This, together with supervision by means of standard tests, should be the chief function of the superintendent in small cities; in large cities, a special director of measurements and supervision should take care of this work.

Pupils could then be given extra promotions, etc., on the basis outlined above or, if the seven-, eight-, and nine-year course of study were in effect, could be placed in one of these that would, without skipping or failure, allow them to finish Grade VIII at the mental age of 14 years 0 months to 15 years 0 months. In extreme cases, some skipping or failure might be needed. Careful grading gives more and better education at less cost.

About 5 per cent to 10 per cent of any average class should be held back. There is a conflict in high-school work between the high standards necessarily required for entrance to professional schools, such as medicine, law, etc., and the lower standards that are necessary if the high school is to give education to the ma-

jority of the children, not deny it to them as at present. The standard for entrance to the professional schools might be raised above what it is at present to bar out inferior people. A mental test should also be given and a fairly high standard required. A lower standard or easier courses might be made use of for pupils who simply wished to benefit by a high-school education. Schools should be made to fit the pupils, not pupils expected to fit the schools.

On account of the small number of pupils and the lack of money and clerical assistance, little work of value can be done in a single school and the experimental work that is done does not give very reliable results. A city with ten or twenty large schools offers a very rich field for work of this nature. The work of grading and supervision is almost totally ineffective without such a scientific basis. In this short account, many things have been passed over rapidly and all and sundry are warned not to interpret and extend these ideas in their own way and then blame the writer if their own mode of handling is unsatisfactory.

MIND-SET AND LEARNING[1]

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A meeting of teachers

"I wish I understood these 'laws of learning.' Everywhere I go some one refers to them. They sound very imposing—and mysterious—but do they really amount to anything? How did the world manage to get on so long without them?"

Do teachers need psychology?

"Well, you may be interested in the laws of learning, but I'm not. I don't see the use of teachers worrying their heads about psychology. Teaching has to do with children, real live children; but psychology is as dead as other things that live only in books. Teaching is hard enough and dry enough without having to learn psychology besides. If I went to summer school, which I don't intend to do, I'd study photography or something else interesting, but you'd never catch me in educational psychology. Besides, when I go off in the summer I don't want to be always reminded of my work. September to June is enough for me."

The study of education makes teaching more interesting

"Yes, we all know how you feel on such matters; but I believe one reason why you find teaching dry and hard is exactly because you don't study it. At summer school last year I found out so many new things about children and how they learn, and heard so much of the plans and experiments of the other students, that I could hardly wait for school to begin again. I was so eager to see those

[1] The reader must fully understand that Professor Thorndike is in no wise to be held responsible for my popular commentary and elaboration of what is more succinctly—and scientifically—presented in his *Educational Psychology* (Teachers College Bureau of Publications). It has seemed necessary to give this account in order that the reader may more easily follow certain further discussions.

[2] All rights reserved by the author.

things in my pupils and to try some experiments of my own. You will perhaps say I have always liked teaching. So I have in a way, but teaching the same way year in and year out was getting to be pretty monotonous. Now it's a different thing. I have more interesting things to watch than you can imagine. But I must admit that I don't seem to see all my psychology as clearly now as when we were discussing it in the class. More difficulties have arisen than I ever dreamed of. For one thing the psychology seems more complicated, not only when I watch for it in my pupils but also when I try to straighten it all out in my mind. There's nothing I'd like better than for us to talk it over, but I warn you I'll raise many questions. For I want to know."

"If psychology or anything else will keep teaching my brats from being humdrum, I'll say, "Yes, let's study it." I am willing to listen awhile and see how your discussion starts off, but I tell you beforehand I'm skeptical of it all. You don't know my pupils. Psychology may help your nice well-dressed children who come from good homes, but it takes something stronger for mine. My first step with each new class is to put the fear of God in their souls. After that I can sometimes do something with them. Perhaps I might even use psychology then, if I knew enough about it."

Does psychology fit all children?

"Where shall we begin? Some one suggested the laws of learning."

"That's my first question: why do you say 'law'? I know you don't mean that we have to obey Thorndike or whoever first made those laws, so why say law?"

"A law of learning is like any law of nature. Newton didn't *make* the law of gravitation; he *discovered* it. As I understand it, a law of nature is nothing but a statement of an observed regularity. Galileo discovered certain laws of falling bodies, but bodies fell afterwards just exactly as they had fallen before. They didn't pay any attention to Galileo. He only told what they do, regularly do, always do, so far as he could tell. The laws were merely exact statements of how bodies fall."

The meaning of the term "law"

"Well, if that's all I don't see the use of laws. Why bother with them?"

"The use is this: if we know what to expect of falling bodies, we then know how to act where falling bodies are concerned."

"That's nothing but common sense, isn't it? Where does the science come in?"

"Science is itself nothing but common sense, common sense more careful of itself. Science is based on experience just as common sense, but it has more exact ways of measuring and of telling. In particular it tries to include many experiences under one statement. A law of nature is merely a very inclusive, very careful, and very reliable statement of what to expect."

"That sounds reasonable, but apply it to our topic. What is a law of learning?"

"A law of learning would be nothing but a very carefully made and very inclusive statement of how learning takes place."

"Give us one of your laws of learning. I'd like to know how learning takes place. Perhaps I'd know better how to make my pupils learn."

"I'll give you the Law of Readiness: When a bond is ready to act, to act gives satisfaction and not to act—"

"Now there you go with your outlandish jargon. Why don't you use everyday English. Bond! What is a bond?"

"That is the trouble about trying to be exact. As a matter of fact I fear I have over-simplified it now. I think, though, we'll have to begin further back. We'll have to get some preliminary terms or give up the effort to use understandingly the laws of learning."

"Go on. Only don't give us too many."

"Let's begin with S➾R and build up from there. S stands for stimulus, or perhaps, more exactly, for situation acting as stimulus; and R stands for response. Any act of conduct is a response (R) to some sort of situation (S). I hear a child crying (S), I stop and listen (R). I meet a friend on the street (S), I say 'good morning' (R). My friend sees me and hears me speak (S), he responds in like fashion (R). He notices that I stop walking (S), he stops (R). I see that he is within hearing distance and attentive (S), I speak commending his address of last evening (R). He hears me speak (S), the meanings of my words arise in his mind (R). He appropriates my meaning (S), his face flushes and he feels gratification (R)."

The symbol S➾R

"You haven't said a word about bond or connection. Please explain that. I told you I'd raise many questions."

"Notice the next to the last instance given: He hears me speak (S), the meanings of my words arise in his mind (R). If he had not in the past *learned* the meanings of these words, my voice would have struck in vain upon his ears. The meanings could arise in his mind only because in the past he had learned to associate thenceforth these meanings with these sounds. That is, his past experience had built up somewhere in him—in his nervous system, in fact—such connections or bonds that when a particular sound is heard (e. g., my spoken words *magnificent address*), its appropriate meaning arises as a thought in his mind. Each such language connection or bond has to be learned, that is, built up by and in experience."

The term "bond"

"But not all bonds are built up or learned, are they?"

"No, that is what I was about to say. My friend flushed with pleasure (R), when I commended his address (S). His being pleased at commendation and his flushing in connection were not learned; these responses are innately joined. Each one of us is born with many such responses already joined by strong bonds to their appropriate situations."

Innate vs. acquired bonds

"What is the arrow in S➾R? Is that the bond connecting S and R?"

"Yes. It is usually better to think of the situation (S) as being sized up or received by one nerve structure (or mechanism), the response (R) as made by a second, and the arrow as a third nerve structure that carries the stimulation from the structure (or mechanism)

S to the structure (or mechanism) R. There are some difficulties in so simple a statement, but we shall not go far wrong so to take it."

"Do you mean that this S ⇒ R holds of everything we do? Everything?"

"That is exactly what I mean. All conduct of whatever kind is so described. Of course some situations are very simple, while others are very complex. And similarly with responses, some are simple, others exceedingly complex. The bonds also vary. Some are so simple, definite and 'strong' that as soon as the stimulus comes the response follows with almost mechanical promptness and certainty. You know how it is if one is struck sharply just above the knee cap, the knee flexes in spite of anything we can do to prevent it. Other connections or bonds are so weak, so little formed, that the least little interference will prevent the response. If I ask a third grade pupil what is 2 x 2, he will say 4 at once. If I ask 7 x 6, he may tell me 42, but he is likely not to feel very sure of it. If I ask 8 x 13, he is almost sure not to know. Now it isn't a question of knowing 42 as a number in and of itself, it is precisely a question of having or not having built a bond that joins 42 to 7 x 6, so that: thought of 7 x 6 (S) is followed by 42 (R). The arithmetic connections or bonds have to be built in order to be available for use. I wonder if the word 'learn' doesn't begin to take on a more definite meaning?"

All conduct can be described in terms of S ⇒ R

"I see that S ⇒ R does join up with arithmetic and language; but does it fit all learning—geography, for example, or composition?"

"Most certainly. If one should ask about the capital of North Dakota. some will answer at once; others will hesitate, making perhaps several guesses; some won't know at all. The presence or absence of the bond and its strength if present tells the tale. So with composition work. One child will leave a straight margin to the left of the page, another will write as if there were no such thing. The difference is the presence or absence of the appropriate bond. One child will join with *and's* many short sentences. Another will consciously avoid it. So with morals. One boy in a tight place (S) will lie out of it (R). Another in the same tight place (S) will tell the exact truth unflinchingly (R). Everywhere it is a question of what bonds have or have not been built."

"Now tell us about readiness and satisfaction and annoyance. I have them fairly clear, but there are still some difficulties."

"And others of us know nothing about them as yet."

"Readiness is easier to see than to tell. I like to think of it as connected with the degree of stimulation needed at any given time to bring about a given response, the greater the readiness, the less stimulation is needed. Suppose a small boy and a heartless experimenter. One hot day the boy begs for ice cream, boasting recklessly that he can eat six helpings. The experimenter dares him to do it, saying that he will furnish the ice cream. The contest is on. Situation: a plate of ice cream before a small boy on a hot day. Response: the boy falls with alacrity upon the cream. Readi-

Readiness discussed

ness is high. The second helping finds, if possible, even greater readiness. But toward the end of the third plate readiness sharply declines. The fourth sees readiness reduced to the zero point and even below. Readiness then is a condition of the neurone measuring the degree of its craving for activity."

"That is clear so far, but are there not other causes of readiness or unreadiness?"

"Indeed yes. Fatigue, due to extended exercise, is a common cause of unreadiness. (The case above was different. It was not so much exercise of jaw or palate nerves as it was fullness of stomach that reduced below zero the readiness for ice cream.) Preoccupation with something else of an opposing kind may also bring unreadiness, as when fear or sorrow cause unreadiness for mirth. A most important source of readiness is set, one's mental attitude at the time."

Conditions making for readiness or unreadiness

"I wish you would tell us about set. I have heard so much about set and purpose that I just must straighten them out. What is the connection between set and purpose? But first, what is the difference between set and readiness? They seem much alike to me."

"They are much alike and sometimes confused, but I believe we can make a clear distinction between the two. Set is broader than readiness. Readiness is best thought of as belonging to one response bond (possibly a compound response bond), while set refers to the mind acting more or less as a whole (or for our purposes, set more precisely belongs to an aggregate of bonds that for the time being have practical charge of the person or organism.)[3] The term mind-set-to-an-end brings out perhaps more clearly what I have in mind. The emphasis here is on one controlling end which seems to possess the mind. The organism is bent or set upon attaining this end (typically an external end). The practical relations between set and readiness are here most interesting. A boy gifted in baseball is anxious that his team shall win in the match next Saturday. We may say that he is 'set' on winning the match. This set reaches out to many allied and auxiliary response bonds and makes them *ready* for the part they may possibly play in attaining the end in view. The boy's ear will be 'wide open' to hear any useful 'dope' on the game. His eye will be 'peeled' to see the curves of the opposing pitcher. This effect is general, the mind-set-to-an-end in fact makes more ready all one's inner resources (response bonds) that by previous inner connection seem pertinent to the activity at hand. Nor is this all. Simultaneously with passing on readiness to pertinent bonds, this set also makes unready all those response bonds whose action might interfere with attaining the end in view. The same thing that made our baseball boy ready for the necessary practice during the preceding week made him correspondingly unready for anything that might interfere with that practice. Every teacher knows that little study is given to books just in advance of any engross-

"Set" and "readiness" discriminated and related

[3] There is still a slightly different sense in which the mind set makes one see everything as "roseate" or makes one "blue."

ing contest. Some college teachers say no serious study is possible till after the Thanksgiving games."

"You have struck something live now. But you seem almost to make a thinking being out of mind-set. It entertains ends. It seems to know what will help and what will hinder action to these ends. I don't see what becomes of the person—his self, I mean."

"Your inquiry raises a real difficulty, but it is a difficulty rather of language than of fact, I believe.

The action of the mind-set

Suppose a little girl walking by a toy shop. Her shoes have been hurting her feet. All at once her eyes fall on a fairy vision of a doll. Her heart (aggregate of S➟R bonds capable of forming a mind-set) responds at once. She wants the doll. A set for possessing the doll is in possession of the girl. Shoes are forgot, by-standers vanish. She and the doll for one brief moment make up the whole world, but in another moment the mother is included: 'O Mother! I want her so much. Please get her for me.' Then that world enlarges to include in succession shopkeeper, price, money, possible sources of money, Father, Uncle George. A formal analysis will perhaps make clear the life history and action of this psychological set: (i) there must be available for stimulation certain end-setting-upS➟R bonds (here the doll-appropriating response and, likely enough, bonds for doll-carriages, ice cream, etc.); (ii) something (here the chance sight of the doll) stimulates one such available S➟R bond; (iii) a response follows, wherein an end is set up (here the strong wish for the doll); (iv) from this 'set' the spread of 'readiness' through previously made connections to allied and auxiliary S➟R bonds (here become 'ready' the bonds for asking Father or Uncle George); (v) a similar and simultaneous spread of unreadiness to such other S➟R response bonds as might thwart or unnecessarily postpone the doll-appropriating activities (the pains from the shoes are forgot); (vi) then follows the auxiliary action of the most ready of the allied S➟R bonds ('O Mother, please get her for me'). Thus instead of using the mysteries of self and thinking to explain what has here gone on, we must, I think, ultimately explain from the inside and along these lines what a self is and how thinking proceeds. But that's another story."

"Well, we have to admit that psychology is not as dead or dry as I said. But how are you going to use all this? What bearing has it on your laws of learning that you began to talk about?"

"Possibly when we take them up our digression will be justified. Suppose we begin now? Thorndike gives three major laws, those of Readiness, of Use and Disuse (or Exercise), and of Satisfaction and Annoyance (or Effect). The Law of Readiness follows well what we have been discussing: *When a bond is ready to act, to act gives satisfaction and not to act gives annoyance. When a bond is not ready to act, to be forced to act gives annoyance.* Think what we have been saying about readiness, and see if this law does not sound reasonable."

The three Laws of Learning

The Law of Readiness

"Why, yes indeed. That boy and the

ice cream—as long as the ice-cream-eating bonds were ready to act, he got satisfaction from his eating. And the less ready he became, the less satisfaction he got from his eating. I suppose if he had been compelled to eat all six plates, it would have proved very annoying. Yes, this law is clear, but I have been wondering if it isn't a kind of definition of what is meant by satisfaction and annoyance. What do you say?"

"The question is a very interesting one. I am inclined to agree with you. But probably we had better not go into that discussion just now. Fix attention on readiness as a state of the neurone (or nerve structure) which disposes it to action, then this law throws its light on the meaning of satisfaction and annoyance. Probably our general experience has something else to add in any particular case. I am inclined to say that this law partly defines and partly joins things of which we have otherwise independent knowledge. Let us now go to the Law of Satisfaction and Annoyance."

"You skipped the Law of Use and Disuse. Do you wish to keep the order you first gave?"

"So we did skip it, and I believe it is best to take the other first. Before taking it up, consider what we are about. Some S ⇒ R bonds we bring into the world with us; others and the great majority we acquire after we get here. Of the innate bonds some fit our civilization and need to be maintained; others don't fit so well, and need to be changed or killed off. Acquiring new bonds or changing old ones is what we mean by learning. Perhaps our commonest work is strengthening or weakening bonds."

Learning defined

"What do you mean by strengthening a bond? When is a bond strong and when weak?"

"We strengthen a bond when we change the connection between any S and its R so that the response (R) will more likely follow the stimulation (S) or will follow more promptly or more definitely. Weakening is merely doing the contrary; though often people speak of weakening a bond when they really mean strengthening a substitute bond. Of course, pedagogically, this is usually the best way of weakening an undesirable bond."

Strengthening bonds

"Can all bonds be changed? Or are there some beyond our influence?"

"There are some bonds practically beyond the power of education to modify. These we call reflexes. They belong especially to certain more mechanical actions of the body. Education too has limits fixed for it by nature. Of course then when we are speaking of learning we restrict ourselves to modifiable bonds."

"We are ready now to state the Law of Satisfaction and Annoyance (or Law of Effect): *A modifiable bond is strengthened or weakened according as satisfaction or annoyance attends its exercise.*"

The Law of Satisfaction and Annoyance

"When we had this last summer our instructor led us to repeat many times: 'Satisfaction strengthens, annoyance weakens.' And then he would have us repeat the whole law. So that in the end we fixed it strongly in mind. It is a great law, all right. I never dreamed when I first heard it how much help it can give the teacher. But the more

I watch my children learning, the more I believe that this law is the very bottom on which our learning rests and upon which we must base our school procedure."

"Let's go on and see how this law tells us what to expect in our teaching."

"I believe I see already how it all is going to work out. Mind-set-to-an-end is purpose. If the child has a strong purpose, this as mind-set pushes him on to attain his end. This mind-set makes ready his inner resources for attaining the end. When he succeeds, these ready neurones and the success both mean satisfaction; and satisfaction means strengthening the bonds used. He learns by doing. His purpose helps him learn. It must be so. Mind-set, readiness, success, satisfaction, learning—they follow just this way. Am I not right?"

"You have certainly caught the clue. We'll follow it up next time."

(*To be continued*)

AN EXPERIMENT IN COÖPERATION
III. Reading as Study

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At the outset of our experiment, the reader will recall, it was agreed that we should endeavor to make the training in reading bear fruit in all of the pupils' use of books. The need of improvement in ability to deal with the printed page in history, geography, and arithmetic, as well as in literature, was remarked by everyone. The problem of generalizing habits of study reading and of securing intelligent application to various kinds of reading tasks was clearly recognized and was included in the program.

STARTING THE DRIVE

In the early weeks of the enterprise visits to reading classes and to classes in other subjects confirmed the suspicion of the leaders that the majority of the teachers were not making persistent efforts to train the pupils in study or to make the reading lessons the basis of generalized habits capable of being adapted to new but similar tasks. The question, *How* will you do this? or the equally pertinent question, How *did* you do it? was seldom heard, much less a reference to the fact that the methods of reading were being learned largely for the sake of applying them in the other studies.

The teachers were asked to observe the methods of the pupils and to begin systematic instruction in the art of study. Some frankly confessed that they themselves had never analyzed their study procedures and therefore felt unequal to the task of guiding the children. To show how inadequate the equipment of some of them was I will cite the extreme case of the teacher of history who had her pupils pass to the board in rotation, each writing from memory a sentence from the text. There was no analysis, no consideration

of problems, no selection of items of importance, merely the memorizing of sentences one after the other as they appeared in the book—"only this and nothing more."

At the other extreme of course were those who knew how. These set the pupils to looking for the meanings of chapters, sections, and passages as wholes. With books open in class they went through the unit of subject matter step by step, thinking the writer's thoughts after him, discovering his purposes, interpreting his suggestions, contributing of their own experience, debating moot points, and making such applications of the ideas as they could.

THEORY AND THE FOLLOW-UP

All of the teachers were urged to read or reread Professor McMurry's *How to Study*, and in some of the conferences his principles were discussed and illustrated. Attention was called also to Mr. Lyman's outline of a program in "Assimilative Reading," based on Professor McMurry's book, which appeared in the *School Review* for October 1920. This outline, although written for the Junior High School, was seen to include much that should be taught earlier.

Dependence was not placed, however, entirely on group conferences and professional reading. Both the principals and the special supervisor engaged in a persistent "follow-up." It was doubtless this room-to-room visitation, with informal chat, a bit of teaching, a suggestive question, and an occasional complete lesson which made the theory discussed in conference effective in actual practice. Without the discussions the specific help would have been in some instances misinterpreted, but without the classroom visits the discussions would have been too often without tangible results at all.

The kinds of opportunities that presented themselves may be illustrated by the following. A teacher remarked that her history class made very slow progress and evidently needed something which she had not as yet supplied. In an actual recitation it appeared that no use had so far been made of the author's own analysis of the content. The headings had not been either noted or challenged. Examination of them soon discovered the fact that they were not to be trusted. They were sometimes inaccurate or even misleading. Why have them at all? This question led to the discussion of how ideas are organized, and set the pupils to writing headings for themselves and so to dealing with questions and problems instead of merely with statements of fact. The pupils learned, in a word, how to do something constructive with the text instead of passively accepting its words and trying to present them unchanged and unassimilated at the hour of recitation.

On another occasion in a more elementary class the topic for reading was Gutenberg and the invention of movable type. The pupils were reading the very brief paragraphs of which the account was composed one at a time and answering questions put by the teacher, evidently with a view to getting the text translated into the pupils' own words and so brought surely into their comprehension. There was apparently no large question in the pupils'

minds nor any guiding purpose which would tend to interpret and organize the piece as a whole.

When the first part was completed, the supervisor begged to be allowed to set a task for the class. He asked the children whether they could do something hard. They responded willingly. Indeed they could! Very well then, would they read the whole of the second or concluding part of the lesson and be ready to tell what it was about and why the writer had a Part I and a Part II. This they did, explaining that the first section was necessary to relate how another had by accident discovered that wet blocks would imprint characters on paper, while the second was devoted to an account of Gutenberg's practical application of the idea.

By accident the supervisor happened upon the beginning of this same lesson in another room. Here the teacher introduced the study by raising the question as to who really invented printing. She said there might be an honest difference of opinion. The lesson would contain some facts that they might consider. Would the pupils read with the idea of deciding to whom the credit for this most useful discovery really belonged? Needless to say the pupils read the whole account without interruption and were so eager for the fray that they could hardly restrain themselves till the discussion should begin. It was cleverly directed by the teacher, and resulted not only in much rereading and clearing up of not-understood passages together with a definite fixing of the main facts in their relations in the minds of the children but also created some sense of the value of withholding judgment until the case has been adequately considered, presented a method of gathering data and holding them in mind, and probably also aroused an interest in the main question sufficient to furnish "drive" for further reading when the opportunity should offer.

THE PROBLEM OF FINDING MATERIAL

These two lessons are excellent examples of two widely different conceptions of the task of teaching children to read. The former was obviously more formal and mechanical. It was also far more superficial and narrow in its range of values. The fact that it is exceedingly common explains in large measure why there is general complaint that children and even the youth of high school and college do not know how to study. Their teachers have had a wrong or inadequate conception of their job.

The fault lies in part at the doors of the makers of books for school children and also in part at the door of those who choose the books which the children are required to use. Any one who will examine a score of school books selected at random but representing both prescribed, or "regular," and supplementary texts will easily verify the statement that those who write for children seem often to think only in separate sentences and frequently fail to secure a reasonable degree of unity in their paragraphs or perhaps even in the piece as a whole. In a word, the writers themselves do not adequately consider the organization of their material and hence prove the enemy rather than the ally of the teacher who would train her pupils in connected thinking.

Books of a scientific or informational character appear to be the most objectionable from the point of view of style and organization. This may be due to the fact that the story form embodies an organization more easily grasped because of the concreteness of the events of which it is made up. In any case the selection of books suitable for training in general informational reading—not the reading of excerpts but the reading of whole volumes—is a difficult task.

WAYS AND MEANS: A READING INDEX

The English Centers determined to make a point of such reading in the intermediate grades. The course for those grades was separated into two parts, first, silent reading of informational material, and, second, study, oral reading, and dramatic expression of literary material, the emphasis being divided about equally between the two. This set everyone to looking for worthwhile books and selections, the larger wholes preferred.

In order to enable each seeker to contribute to the common fund of knowledge of the most valuable material, a plan for a Reading Index was devised and each teacher was provided with a few cards upon which she could conveniently report the results of her experience. Ordinary library cards were used, printed on the face and back as indicated in the sample forms which appear below. In order to avoid making the task seem too arduous, only ten or twelve cards were given to each teacher at first, but many were glad to use a larger number when they saw the possibilities of the scheme. Some were eager to revise.

X——— SCHOOL

READING REPERTOIRE (*obverse*)

E. M. D. Grade 3

Title: "Polly Flinder's Apron"

Author: Madge A. Bingham

Book: Howe Third Reader *Page* 1

Classification: (*a*) *Form,* Story

(*b*) *Subject Matter,* A dream

Comment: This piece gives play of fancy and calls to the children's minds memories of their own dreams, which they are glad to tell. The information conveyed is negligible.

Teacher: A——— B——— *Room:* 102

Key other side (Over)

KEY (*reverse*)

Grading: *E* = easy *M* = medium *D* = difficult

Classification

A. Form: 1. Prose 2. Poetry 3. Drama

B. Subject matter:

1. Adventure
2. Art
3. Biography
4. Child life
5. Fancy
6. History
7. Humaneness
8. Humor
9. Ideals
10. Nature—out-of-doors
11. Patriotism
12. Travel—life in other lands

Comment: Reason for teaching

The filling out of these cards had a positive influence on the teacher herself. It brought out forcibly the fact that lessons in reading should be carefully selected. They should fit into some logical scheme in order that they may provide the opportunity for not only a varied and well-balanced experience in reading but also for acquiring a definite body of knowledge. Moreover, by means of it each teacher was compelled to consider what chief purpose each piece should serve and was thus

placed in the best possible frame of mind for preparing to do her part in the classroom activity.

No one will be surprised to learn that not a few teachers had never consciously considered what peculiar values a certain piece might afford nor planned to present it in the light of unique and definite purposes. In such hands truly reading may be little more than ready recognition of words, not a means to a liberal education.

Since others may be interested in the selection of informational reading books other than texts made up of miscellaneous short selections for the pupils of the intermediate grades, a few of the titles most often commended are here set down. The reader is asked to note that the list does not represent a consensus of opinion arrived at after several years of winnowing, but rather a body of first impressions. Not all teachers had access to collections sufficiently varied to permit them to judge the value of some of the books named. The list may, however, serve to illustrate the nature of our problem and the partial solution of it at which we arrived.

MATERIAL FOR INFORMATIONAL READING

Grade 4

Wonders of the Jungle—Ghosh
A Visit to the Farm—Large
Home Life Around the World—Mirick and Holmes
Wilderness Babies—Schwartz
Jack, the Fire Dog—Wesselhoeft
Grasshopper Green's Garden—Schwartz
Thirty More Famous Stories
Among the Meadow People
Stories of Great Americans for Little Americans
White Patch—Patri
Little Pioneers—Warren
Ten Boys on the Road from Long Ago
Animals at Home—Bartlett
Lolami, The Cliff Dweller
Stories of Country Life—Bradish
The Sandman—Hopkins
Children of the Arctic—Peary
The Dutch Twins—Perkins
Five Little Strangers—Schwartz
Four Old Greeks—Hale
Big People and Little People of Other Lands—Shaw
America First—Green
American History Story Book—Blaisdell
Child's Book of American History—Blaisdell
For the Children's Hour—Bailey—Bk. III
Glimpses of Pioneer Life—Livingston
Stories of American Life and Adventure—Eggleston
Stories of Illinois—Pratt
Tales of Long Ago—Terry
Safety First for Little Folks—Waldo
Early Sea People—Dopp
Story of Ab—Nida
Later Cave Men—Dopp
Travelers and Traveling—Tappan

Grade 5

Great Inventors and their Inventions—Bachman
Stories of Woods and Fields
Old Settler Stories
Wood Folk at School—Long
Krag and Johnny Bear—Thompson-Seton
Colonial Stories
Children of History
Kwahu, the Hopi Indian Boy
A Boy on a Farm—Abbott
Story of Glass—Bassett, etc.
True Story of Benjamin Franklin—Brooks
Cave, Mound, and Lake Dwellers—Holbrook
Our Country's Flag—Holden
A Little Brother to the Bear—Long
The Magic Forest—White
Later Cave Men—Dopp
Heroes of Everyday Life—Coe
Ten Little Indians—Wade
Hans Brinker—Dodge
Children's Classics—Stevenson
Children's Plays—Skinner
Our Holidays

Boys and Girls of Colonial Days—Bailey
Camp and Trail in Early American History—Dickson
Days and Deeds of One Hundred Years Ago—Stone and Fickett
Indian Child Life—Eastman
The Iron Star—True
Lake Michigan and the French Explorers—Morton
Makers of Our History—Faris
Real Stories from Our History—Faris
How We Travel—Chamberlain
Travels of Birds—Chapman

Grade 6

American Book of Golden Deeds—Baldwin
Stories of Brave Dogs—Carter
Makers of Our History—Faris
Fighting a Fire—Hill
Stories of Animal Life
Story of Christopher Columbus
Stories of the Great West—Roosevelt
Toward the Rising Sun
Under Sunny Skies
The Wide World
Lobo, Rag, and Vixen—Thompson-Seton
Secrets of the Woods—Long
Bird Stories—Burroughs
Pioneers of the Mississippi Valley—McMurry
Adrift on an Ice-pan—Grenfell
Black Beauty—Sewell
American Indians—Starr
Home Life in All Lands—Morris
Around the World in the Sloop Spray—Slocum
Lives and Stories Worth Remembering—Kupfer
Heart of a Boy—DeAmicis
Heidi—Spyri
Heroes of Every Day Life—Coe
Lisbeth Longfrock—Poulsson
Mexican Twins—Perkins
Nuremberg Stove—LaRamée
Some Merry Adventures of Robin Hood—Pyle
Stories of the Spanish Main—Stockman
Tad and His Father—Hullard
American Hero Stories—Tappan
Lincoln: The Man of the People—Mace
Stories of Thrift for Young Americans

Material for literary study was much more easily found. The difficulty there was chiefly one of method—but that is another story.

A COURSE OF STUDY IN GEOGRAPHY FOR THE FOURTH AND FIFTH GRADES

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An organization somewhat different from that of the traditional course of study is attempted in this paper. The idea or purpose back of the organization has been to try to show how the course of study may be made to contribute to a better understanding among teachers of the principles of project-teaching. The first step was to decide, as carefully as possible, upon the objectives for each of these grades—the knowledges, skills, habits, appreciations and attitudes that should be the outcomes of the study. The next question was to decide on worth-while projects which, when analyzed, it is found will give the training necessary for the attainment of these objectives.

FOURTH GRADE—WORLD GEOGRAPHY

Grade Objectives:

1. An acquaintance with the earth as the home of many peoples.
2. Knowledge of the conditions of life in the warm, cold, and temperate regions of the earth.
3. A sympathetic attitude toward all peoples and all classes in the various regions and countries studied.

4. Appreciation of the services rendered us by the different peoples of the earth.
5. An understanding of how our work and products are of value to the different peoples of the earth.
6. Appreciation of the beauty of the world as expressed by its plant life, its mountains, oceans, streams, etc.
7. Knowledge of the necessary place geography.
8. Formation of proper habits of study, which includes an intelligent use of the globe and maps.

From the study of local history and geography in the third grade the children have gained an idea of the sources of the home food supply, of means of travel and transportation, of topographical features, and of some of the conditions which have controlled the growth of Louisville. An attempt is made in the fourth grade to organize these experiences of the children and develop the idea of the earth as the home of peoples who, on account of their environment, have different occupations and different modes of living.

The "children's projects or activities" indicated below are suggestive only of the types of responses that may be expected of children as a result of a certain approach to the subject. A different approach might bring different responses. "The one essential of any project is that the person or persons engaged must be working wholeheartedly in an undertaking for which there has been purposeful planning." It is also well to remember that the desired outcomes in terms of knowledges, skills, attitudes, etc., should be kept in mind by the teacher from the first step to the last.

THE CHILDREN'S ACTIVITIES OR PROJECTS

I. The children tell of the places they have seen or read about and show any pictures they have of these places. Familiar places are located on the globe. The question is asked, "Where are *we?*" Louisville is located, and the direction and distance from the places visited are noted. The children recall the people that they have known who have traveled around the earth. "How long did it take them?" "How did they go?" "Where did they stop?" are some of the questions asked by the children. The more significant ones that cannot be answered at once serve as projects to be worked out and reported upon later. The children collect railway and steamship guides to aid them in the solution of their questions. All routes are traced upon the globe and upon maps. To substitute "geography" for "literature" in Dr. Aydelotte's recent statement, geography "has meaning for a student only so far as the student has questions in his mind."

II. One approach may be to have children trace to region of production some article of common use. This is in answer to their question, "Where does it come from?" They study pictures of the region—lantern slides and moving pictures, if possible—and museum material. If the situation is such as to encourage children to ask questions, they'll not be slow about asking them. They'll want to know how the people build their houses, why they do not build them of wood; what they eat; how they keep warm; what they do to make a living; how they travel; how many people live in this region; what they send us; what they get from us; how they get the furs, etc.; in fact, their questions will include every topic usually studied under "surface," "climate," "drainage," etc., found in many of our courses of study to-day. With this difference, that here the desired knowledges, skills, habits, etc., are gotten in response to a felt need expressed by the children in their questions instead of being imposed upon them by an outside authority. In working out the answers to their questions the children should have access to all the books and illustrative material, pictures, museum exhibits, etc., available. They will probably want to reproduce on the sand table or dramatize certain phases of the life in this region. To help answer some of their questions concerning the surface features of the distant region a study is made of the surface features in the home environment that bear a resemblance to those in the distant region.

III. The study may again be introduced by pictures, or by the idea of trade or exchange of products. Children may go to a market and note foods not grown at home, or they may trace to region of production some articles of clothing, e. g., rubber. Whatever may be the approach the teacher should so plan the situation that the pupils will feel a real whole-hearted desire to know more about this region and that they will express this desire in such questions as, "Where do the foods come from?" "How were they brought here?" "How were they raised?" "Why do not these foods grow here?" "What does rubber come from?" etc.

IV. For method of procedure see suggestions above.

THE KNOWLEDGES, HABITS, SKILLS, APPRECIATIONS AND ATTITUDES INVOLVED

I. Acquaintance with the globe as the symbol of the earth.

A. An understanding of the fact that we live on a round earth; that an idea of its size may be gotten by the time required to travel around it; that its surface is divided into masses of land and bodies of water, called continents and oceans. History: A knowledge of the stories of Columbus, Magellan and Drake. Modern means of travel as compared with those of the early explorers.

B. Habit of relating geographical facts to the globe and maps.

II. Knowledge of the cold regions of the earth.

A. Knowledge of the people and their occupations.

1. Homes: Winter house; material used; why this material, necessary for its being round or dome-shaped; summer house; compared with our tent life; how made.

2. Food: How obtained, weapons used.

3. Clothing: How skins are secured, how prepared, etc.

4. Transportation and communication: how sledges are made, how drawn, etc.

5. Trade or exchange: the products imported and exported.

6. Extent and centers of population.

B. An understanding of how the life of the region is influenced by geographical location.

C. Appreciation of the efforts of the people to overcome the handicaps of physical environment.

D. Knowledge of the more important types of plant and animal life.

E. Appreciation of the dependence of the different regions of the earth upon each other.

F. Effective habits of study, including ability to collect and organize data in answer to a question and the intelligent use of maps, globe, pictures, and other illustrative materials.

G. Knowledge of the essentials of place geography.

H. Skill in making graphs; making product maps; coloring outline maps to illustrate location of products or some other phase of the work; collecting pictures and other illustrative material.

III. Knowledge of hot regions of the earth.

The knowledges, habits, skills and attitudes desired as outcomes of this study are similar to those outlined above. The experiences that the children will have in trying to answer *their own* questions about the region will enable them to attain the desired objectives in terms of knowledge, habits, etc.

IV. Knowledge of life in temperate region.

The details of this study will be worked out later. It is recommended that strikingly different types, e. g., the hot and the cold regions, be selected for the first study of the year.

The study of "World Geography" affords abundant opportunity for the children, through their reading, to enter vicariously into the life of the various regions of the earth. As Dr. Bobbitt urges: "The geographical readings should be such as to permit our children imaginatively to travel through the various cities and countries and regions of the earth, . . . and through this reading experience they will acquire knowledge and appreciation of the world such as can never be obtained from the most perfect memorization of the facts supplied in our textbook geographies." [1]

[1] Bobbitt, Franklin, *The Curriculum.*

FIFTH GRADE—STUDY OF NORTH AMERICA WITH EMPHASIS ON THE UNITED STATES

"Emphasis may now be placed upon questions which lead to a more intensive study of the geographical controls of activities, and consequently to more restricted parts of the earth's surface. . . . In the study also of each important industrial material produced in the United States, there are included questions of exports, imports, and foreign trade routes and relationships, so that contact is relatively constant with the world as a whole." [1]

Grade Objectives:

1. Knowledge of the large relief features of North America and of the facts concerning the distribution of industries and vegetation.
2. Knowledge of the more important industries of the United States.
3. An understanding of the dependence of an industry upon geographic environment.
4. Knowledge of the processes used in some of the more important industries.
5. Appreciation of the interdependence of different sections of a country and of different countries.
6. Appreciation of the dignity of labor.
7. Understanding of the reasons for growth of certain cities.
8. Knowledge of the essentials of place geography.
9. Effective study habits, including the ability to use illustrative material, reference books, maps, globe, charts, etc., intelligently.

The Children's Activities or Projects

I. Study may be introduced by some current event or by a succession of pictures of significant regions, or the children may tell of the places in North America that they have seen or read about. The class discussion and the pictures should suggest many problems to the children, e. g., "Why has North America so many kinds of places and so many kinds of workers?" If given an opportunity to find the answers to their own questions they will consult textbooks, reference books, pictures, maps, the globe, newspapers, magazines, etc. The teacher will need to see that all of the materials needed for solutions of the problems are available for the children. The teacher will also need to see that the children so interpret the material that it will show its bearing on the solution of the problem. In other words, with every step the children should keep the goal in mind, namely, the answer to their question.

II. *A.* The children may recall their experiences on the farm at some previous time, or their school excursions to the country. Class discussions together with a visit to a flour mill, tobacco factory or some local industry will serve as a stimulus to them to ask many worth-while questions. As indicated above, they should be given the opportunity to answer their questions. This will afford training in the best habits of study. The teacher should see that the necessary materials, books, charts, maps, pictures, etc., for the solution of the problems are available.

B. The following brief account of the work of a fifth grade class will indicate one method of procedure. The children were given the opportunity to tell what they would like to know about lumbering. Some wanted to know one thing, some another. When they were asked how they would set to work to find the answers to their questions, they replied, "Go to the library." "Consult books in the room cabinet." "Hunt for pictures in the magazines." "Talk to people who know." After several days of reading and collecting pictures the class was brought together for an informal discussion. The children on this occasion had many questions to ask; some were suggested by the pictures found but not understood, others arose from reading not yet completed. These questions served as a motive for further study.

One afternoon the entire class with their teacher went to the woods "to play lumbermen." On this trip the children had opportunity to observe some of the native trees of Kentucky, how trees prevent washing of soil on a hillside, how quickly fire spreads in a forest and how

[1] Bonser, Frederick Gordon, *The Elementary School Curriculum.*

difficult it is to put it out. (They had concrete experience with their camp fire.) Many children brought back twigs and branches to use in their sand table work. One boy, who was working on transportation, hunted all afternoon for branches suitable for making a corduroy road.

The study closed with the children's planning, writing and giving quite an ambitious three act play, of five scenes, entitled, "Christmas in a Lumber Camp."

The knowledges, habits of study, appreciations, in fact, all of the outcomes desired for this study were gotten by these children and no one would doubt their "wholehearted activity" throughout.

THE KNOWLEDGES, HABITS, SKILLS, APPRECIATIONS, AND ATTITUDES INVOLVED

I. Position of North America.

A. Account for importance among the continents.

1. How have location and size contributed to the importance of North America?

a. Advantages of position with respect to surrounding bodies of water, being in three heat belts?

2. How has coast line influenced the development of North America?

a. Extent of coast line, opportunities for trade.

3. How have the surface features contributed to the growth of North America?

a. Value of the plains to man.

b. Value of the mountains to man in production of lumber, mineral resources, etc. Effect of north and south trend of mountains.

B. Ability to use reference books, maps, charts, etc., intelligently.

C. Knowledge of location of important places.

D. Effective habits of study.

E. Appreciation of the natural beauty of our country.

II. Leading industries of the United States.

A. Agriculture.

1. Chief crops raised in Kentucky.

2. How Kentucky ranks as a wheat growing state; as a corn state; as a tobacco state, etc.

3. The industries in Louisville that are dependent upon agriculture.

4. Do we in Kentucky need all of our agriculture products; if not, what do we do with the surplus?

5. The dependence of the people in Kentucky upon other sections of the United States for food.

6. Location of the great wheat sections of the United States; of the great corn section; cotton section, sugar section, rice section, etc.; and the more important geographic reasons for their production.

7. The value of our agricultural products to us and to the peoples of other countries.

B. Lumbering.

(The following outline is taken in part from the course of study of the Elementary School, University of Chicago. I have seen it, however, in more detail than indicated here, worked out in our own school with excellent results.)

1. The uses of lumber.

2. The native trees of Kentucky.

3. The location and extent of the forest land in Kentucky.

4. The value of the Kentucky forests as a source of fuel and lumber; as a means of protection against floods; as an element of beauty.

5. Important industries in Louisville dependent upon lumbering.

6. How the Kentucky trees are gotten to the mills.

7. The more important processes in the manufacture of lumber.

8. Location and distinguishing characteristics of the forest regions of the United States.

9. National forests—number, how secured, value to the country.

10. Extent of forest land to-day as compared with forested area when early settlers came to America.

11. Enemies of the forests.

12. Methods of lumbering in southern forests; in northern forests.

13. Location of important shipping centers for lumber.

The method used in teaching other industries is similar to that used in the case of agriculture and lumbering. Care should be taken that the children do not get the idea that only one product is produced in a section. Some current event may help to decide the order in which the industries are studied.

After the United States, problems relating to Canada, Mexico, Central America, Panama and our island possessions are studied. As Dr. Bonser expresses it, "Each is approached through some tie of vital relationship to us in meeting some need. The survey of the important questions of geographic control, in determining the activities and conditions of its peoples, is relatively brief for each region, but, after so much detailed study of particular occupations and of our own country, the essential elements are obtained with relative ease." [1]

BIBLIOGRAPHY

Branom, Mendel E.—The Project Method in Education.

Branom, Mendel E.—The Value of the Project-Problem.

Method in Elementary Education, Elementary School Journal, Vol. 18, p. 618.

Stevenson, J. A.—The Project and the Curriculum. School and Home Education, March, 1919.

Branom, Mendel E.—The Project Method in the Teaching of Geography, Vol. 16.

Courtis, S. A.—Measuring the Effect of Supervision in Geography, School and Society, July 19, 1919.

Lull, Herbert G.—The Relation of Project-Problem Instruction to the Curriculum, School and Society, Feb., 1919.

Courtis, S. A.—Teaching through the Use of Projects, or Purposeful Acts, Teachers College Record, March, 1920.

Kilpatrick, William H.—The Problem-Project Attack on Organization, Subject-Matter, and Teaching, N. E. A. Proceedings, 1918.

Kilpatrick, William H.—The Theories Underlying the Experiment, Teachers College Record, Vol. 20, p. 99.

Taylor, W. S.—Project Methods in Teacher-Training Courses, School and Society, Oct. 26, 1918.

Bonser, Frederick Gordon.—The Elementary School Curriculum.

Hennes, Marie.—Horace Mann Studies in Elementary Education V, Teachers College Report, March, 1921.

The Teaching of Geography, History, and Civics, Course of Study, State Department of Education, Trenton, New Jersey.

The Course of Study in Geography for the Elementary School, University of Chicago.

Course of Study in Geography, Horace Mann School.

Course of Study in Geography, Topeka, Kansas.

Course of Study in Geography, Speyer School.

Course of Study in Geography, Baltimore County, Md.

MOTIVATING THE OUTSIDE ACTIVITIES OF A JUNIOR HIGH SCHOOL

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The opportunity of making one-third of the waking hours of one-fourth of our population either the happiest or the most miserable period of their lives lies in the hands of a very few people, those of the Junior High School teachers in this newly established division of our educational system. Also the problem of making the slowly awakening adolescent youth look forward with joy to from eight to ten years more of active, investigating, growing and developing school and college life, or to make of him a helpless driven creature, disliking his

[1] Bonser, Frederick Gordon, *The Elementary School Curriculum.*

environment and counting the days when he may get away to develop and live his life without the restrictions and carping criticisms imposed upon him by one of his fellows whose only claim to authority is that of a few more years of existence and a little greater book knowledge, lies in the hands of the few fortunate people who have the destiny of the adolescent youth of our land in the making.

Recognizing the restless, changing period in our youth at this time, the faculty of the Enslow Junior High School, Huntington, W. Va., have attacked the problem of so motivating the outside activities of our school as to develop the social side of their school life to meet the need of the boys and girls of every class of society. This we consider our democratic duty to our community.

We have in this school children from all classes of society, from the children of the highest officials of our state, to the son and daughter of the poor widow who works with her bare hands at the most menial labor to keep her children in school. Could you tell in the classroom or social activities the difference between these two? Not at all. You may see them side by side in the receiving line at the Alumni party (not reception), or the widow's son may be contributing a solo for the entertainment of the visitors while the son of wealthy parents may be dipping ice cream behind the scenes. Social distinctions and personal affairs are all swept away in the one effort to contribute to the enjoyment of the group. How do we bring it about? Simple enough. The teacher is an example of living democracy before and with the children.

At the beginning of the school year the seventh, eighth and ninth grades are organized and officers elected, consisting of president, vice-president, secretary and treasurer. All the activities of these classes must be decided upon by the individual classes. The home-room teachers of these classes are present at these meetings, though only in an advisory capacity. A period or two in the English department is given to the instruction of the usages of parliamentary law and the president insists upon a strict observance of the simpler forms. By the time these boys and girls finish the ninth grade they can and do conduct a public meeting in a correct and self-possessed manner which would put to shame the average man or woman of affairs.

After an activity has been voted upon, a committee is appointed to take the matter before the "Board of Control," which consists of the principal, vice-principal, two members of the faculty, and one member from each of the three classes. Here the activity is permitted or prohibited as the judgment of the body decides. Refusals rarely occur. since this is a well-known check upon thoughtless or unreasonable requests.

The seventh and eighth grades are permitted one party and one picnic each per year. The teachers enter into these activities with the same enthusiasm as the children, and they would be missed from the fun as much as the most popular member of the class. But since the ninth year will in all probability be the last school year for a small per cent of our boys and girls, they are permitted more class activities because we wish to acquaint them as far as possible with the social observances which will make

them at home in any sensible environment. Their first party occurs on or near Hallowe'en or Thanksgiving, and every one is requested to be ready to contribute something for the entertainment of the whole group. Committees on plans and arrangements are appointed with a teacher as a member (not a chairman) of each committee. Special invitations are sent to the teachers of the other classes and they are considered as special guests. By this time the home-room teachers have discovered who are the leaders and who the retiring backward people in the class, and a quiet word is spoken in the ears of the leaders that they see that certain people have good times. They do not fail us and "wall flowers" are unknown at our parties.

During the winter months an Alumni party is held in order to still the clamor of former students for an opportunity to return, and to give our ninth grade boys and girls an opportunity to play host to a group of people some of whom they have never seen. No young matron who is entertaining in her own home for the first time could be more anxious to please than are these young people who for the first time undertake a real social responsibility. While this affair is never allowed to become a formal one, activities are chosen with special regard to the older people rather than in accordance with their own personal inclination. Invitations are sent to all former teachers and principals and in the words of one of the latter, "Formality is thrown to the winds when we enter Enslow Auditorium, and we are all young again."

The final party during the last month of school, to which parents are frequently invited, is filled with anticipation of life at senior high school, tempered with regret at leaving the scene of three years of happiness and growth. A picnic and "hike" are also enjoyed during the last month of school.

Special friendships between the boys and girls, while not unduly encouraged, are met with a sympathetic understanding on the part of the teacher. They know that wholesome companionship meets with the approval of the teachers, who can usually put an end to any sentimentality by a few sensible sympathetic words, or at least prevent its doing any special harm. Parents are encouraged to open their homes to the friends of the boys and girls and secure their confidence at this critical period.

So much for the purely social activities. Our public entertainments are another feature which we have worked out for the purpose of giving our students a sense of self-confidence and power when in contact with the public, either singly or in groups. At the beginning of the school year plans are made by the faculty for special public entertainments. These usually consist of a "Minstrel" put on by the general talent of the school, "the public-speaking plays," put on by that department, which is a story in itself, and an "Operetta" put on by the music department, which is the big event of the year. In the minstrels some of our most overgrown awkward boys have developed behind their black faces a self-possession and ability which has enabled them to take leading parts in other activities.

The interlocutor in one of our minstrels developed such dramatic and musical talent that he was later chosen

as a leading character in a public-speaking play and as the hero in the Operetta which was given that year. That boy, who came from one of the humblest homes, was chosen for the leading rôle in a play and musical given at the senior high school last year, and he says that it was the encouragement and incentive given him in his three years at the Junior High School that has determined him to complete a college course, though he must work his way inch by inch in order to do it. These entertainments interfere in no way with the regular routine of the school work with the exception of one half day which is given for dress rehearsal for the "Operetta," which is allowed that the children may not be overtired from the three full house performances, a matinee and two evening performances. The work for all these affairs is motivated. The music department has a problem which makes music a joy, and an incentive and purpose in working out notes and exercises. The Public Speaking and English departments are responsible for the dramatics, the Home Economics department sees to the costumes, the Manual Arts attend to the stage setting, the Art department looks after the posters and advertising, and the Commercial department attends to the ticket sales and to the business end of the project. Aside from the initiative power and ability developed in the boys and girls, the school has made $1,500 in the past three years with these school activities, the public has enjoyed wholesome and instructive entertainments, the school has secured a piano, victrola, a library of several hundred volumes, besides several other pieces of smaller equipment, and a sympathy and understanding has grown up between the teachers and students that could have been secured in no other way.

But after all perhaps the weekly assembly has been the best means of giving every boy and girl a chance to discover his latent powers and an opportunity to express them. At the beginning of the year each teacher is assigned a certain date for which she is to be responsible for the assembly program. The teacher usually selects a subject, project or unit around which the program is built. An effort is made to use different children each time, so that all may have a chance to appear at some time during the semester.

Some of the projects worked out last year were a review of the "Women's Movement in America," which was given just after the national election. A number of girls impersonated the leading American women from colonial times to the present, giving in the first person the things which they had achieved for their country as a proof of their fitness for the new duties of citizenship. Another teacher worked out contributions which the negro race had made to America. The lives of Booker T. Washington and the poet Dunbar were reviewed, a number of negro folk songs sung by the glee club, and some victrola numbers of famous negro quartets were given. For "good English" week an English teacher worked out a "good English" program in which every child either from the floor or from the platform had a part. This program gave a great impetus to the movement for better speech. These assemblies were grasped by the teachers as an opportunity to work out special classroom

problems which had apparently been unsolvable. One English teacher who had a homogeneous group of border line children was in despair for a problem to interest them and secure a maximum of effort. She hit upon the device of a simple dramatization for assembly, and found undreamed-of ability when the children really awoke to effort.

Every department is willing to assist in the simple preparations for these assemblies, the public speaking and music departments largely motivating their work through them. These programs were not allowed to interfere with regular class work, and children were placed largely upon their own responsibility and healthful rivalry was engendered among the groups for the success of their particular problem. These assemblies were held at 8:30 in the morning, but there were never less than eight to fifteen interested parents and visitors, some of whom remarked that they had paid fifty cents for an entertainment neither so entertaining nor so instructive.

We do not claim that all the credit for the improved conditions in our schools has been due to the motivating of these activities, but we do claim that they have been a means of self-expression which had led some of our adolescent boys to say that they were always glad to see Monday morning come, and to cause 90% of our ninth grade students to enroll for Senior High School when formerly 10% was the maximum to be expected.

Does this take extra time and thought on the part of the teacher? It most certainly does, but we are amply repaid by the knowledge that we have contributed something toward the making of better Americans, and by the lasting gratitude and friendships we have from the young men and women who are, we hope, better, stronger and happier because of helping hands and sympathetic counsel and comradeship at the most critical period of their lives.

FILMED GEOMETRY

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Can geometry be taught by means of the moving-picture film? I know of nobody who claims that such a subject as this can be absorbed visually. I do not myself claim that such a thing can be done. I say and wish to emphasize the statement that the combination of a good textbook and a good teacher can not be duplicated. But I do claim that there is a place for the educational film in the classroom.

I suppose geometry is about the last subject that one could expect to film. Whether it can be done successfully or not is for others to judge. I have tried to do it and think that I have succeeded. In any case, two thousand feet of visualized geometry is an interesting educational treat to watch. The future will demonstrate the permanent value of it.

Definitions, construction problems, and the various mathematical computations can be very well illustrated on the screen. These things are, after all, the most important factors to consider when one is thinking of practical values. Applied geometry does not require the demonstration of proofs.

This statement tends to create the impression that a film such as this is to be used only in the applied mathematics class; such, however, is not the case. There is, of course, a real opportunity to use it there, but the field is larger than this. Boys and girls in the grammar grades are more interested in the future than they themselves realize. It would be difficult to convince them by any reasonable amount of talking that the future subject of geometry was worthy of serious consideration. If the dormant interest in geometry can be aroused and if a geometrical moving picture can be made the agent to arouse that interest there is an object in having moving pictures in the classroom.

Some of the educators of the "old school" are inclined to assume, apparently without thought, that the modern teacher who believes in visual instruction is doing all that he or she can to produce a visual-minded generation of students. No thinking teacher has such a thought in mind. I am sure that most of us realize that the path of the present-day student is already too abundantly strewn with roses. Most of us are doing what we can to make the way harder, not by putting obstacles in the path but by making the traveller do his own travelling. The educational film is not so much a teacher as an "interest-producer." It aids the teaching of the subject by injecting that element of interest which so many subjects lack.

Certainly there is no more difficult student to interest than those found in the evening schools. This is no fault of the student but rather the result of an existing condition. It is not easy to attend class after a day of hard work; it is difficult for one to keep awake to the values in the lesson. This last statement may be accepted literally. If the educational film can arouse and maintain interest in an evening class it has a place there. Interest promotes attendance and helps accomplish the desired end.

I do not hope to see moving pictures supplant the textbook in our schools. I do hope, however, that more attention will be devoted to visual instruction in the future than in the past. We begin to learn as children because of what we see. Is there any reason why the visual method of learning should be neglected as we grow older? I think not.

THE CLEARING HOUSE

A NEWSPAPER IN THE PRIMARY SCHOOL

Project: The writing and publishing of a newspaper by the 3A Class of Lee School, Cleveland Heights, O.

I. How the Project was Initiated.

1. Primary Supervisor told 3A teacher about a "Newspaper Project" that had been worked out in the Primary School on Adelbert Road.
2. Teacher visited Primary School, saw newspaper and discussed Primary School project with the 3A class at Lee School.
3. 3A Class became interested in the

"Newspaper Project" and decided,—

(*a*) That they would like to publish a newspaper of their own.

(*b*) That they would like to exchange newspapers with the children in the Primary School.

II. Specific Purpose.

1. To write a newspaper that would meet the requirements of a good newspaper and would satisfy the demands of its "subscribers."
2. To publish the newspaper so that it would be possible for each child to have his own copy and so that copies would be available for friends and parents who were interested in the children's project.

III. Planning the Paper.

What constitutes suitable material for a school paper?

1. News items.
   (*a*) Daily observations in connection with various school activities.
   (*b*) School news.
   (*c*) News of the day.
2. Personals.
3. Material for a "funny page."
   (*a*) Jokes.
   (*b*) Riddles.
   (*c*) Funny stories.
4. Stories, letters, poems, and jingles written in connection with any of the social studies of the school.
5. Reports by teacher relative to pupils' progress, e. g.,
   (*a*) List of children having 100% Attendance Record for current month.
   (*b*) List of pupils having exceptionally good judgment.
   (*c*) Honorable mention for work in oral English.
   (*d*) Excellent work in Silent Reading.
   (*e*) Class rank in arithmetic.
   (*f*) Exceptionally good work in spelling.
6. Advertisements secured by pupils.

IV. Execution.

1. Preliminary step to work up enthusiasm, to establish standards, and to give weaker members of the group proper idea of procedure.
   (*a*) Children give items for contribution to newspaper, orally, using third person, when possible to do so; e. g., Jane Lewis reports:—

   Some time ago, Jane Lewis and her father and mother and little brother went to the Hollenden Hotel for dinner. Jane heard her father say to the waiter, "Jane and Bill." She wondered what he meant.

   At the end of the dinner, the waiter came in with a big "Baked Alaska" with "Jane and Bill" written in chocolate. Do you know what a Baked Alaska is? It is a brick of ice cream with whipped cream over it. They had a very happy time.
2. Class criticisms of oral contribution.
   (*a*) Was item an interesting one?
   (*b*) Does it represent child's best effort?
   (*c*) Its good points; its weak points.
   (*d*) Suggestions for improving contribution.

3. Writing news items.
4. Reading news items.
5. Class criticisms with view to accepting or rejecting items.
6. Differences of opinion as to desirability and advisability of publishing certain items submitted led to election of an Editorial Staff, who with teacher pass upon fitness for publication of items in question and offer suggestions to improve contributions.
   (*a*) Effort made to have contribution from every child in every issue of the newspaper.
   (*b*) Child's best effort accepted whether or not his contribution measures up to standard of other members of the group.

V. Selection of Name for Paper.
   1. Names suggested.
   2. Discussion as to suitability from standpoint of content.
   3. Adoption of name, "Breezy Bits from Portable Four."

VI. Plans for Publishing Paper.
   1. Inquiries made as to cost of printing paper. Price found to be prohibitive.
   2. Services of stenographer secured to make stencils.
   3. Copies of paper made by teacher on mimeograph, using stencils.

VII. Business Arrangements.
   1. Discussion of price to be charged for newspaper.
      (*a*) Three cents suggested inasmuch as that was price charged for Cleveland *Press* and Cleveland *Plain Dealer*.
      (*b*) Suggestion made that writing and publishing of "Breezy Bits" involved much work by many people and that it was worth five cents.
      (*c*) Vote taken. Price fixed at five cents.
   2. Election of two Business Managers, whose duties are
      (*a*) To sell papers.
      (*b*) To make change and keep account of money.
      (*c*) To attend to any correspondence arising in connection with the newspaper.

VIII. "Interests and Activities" in connection with and growing out of project.
   1. Furnishes means of motivation for various school activities because of opportunity given to report in their newspaper all interesting experiences in connection with these activities.
   2. Stimulates outside reading. Children read newspapers and magazines to see just what kind of material can be supplied to improve their paper.
   3. Demand for good oral reading when written contributions are presented to group for criticism.
   4. Provides training in both oral and written English through opportunity given children to talk and write on subjects about which they really know something and in which they are vitally interested.
   5. Need for letter writing.
      (*a*) Thank-you letters to friends and parents who helped to make the project a success.
      (*b*) Letters to arrange for exchange of newspapers with Primary School to whom they were indebted for the newspaper idea.
      (*c*) Letters acknowledging re-

ceipt of Primary School paper and expressing appreciation of it.

6. Outlet provided for written work in connection with other projects being carried on during the current month, e. g.,
   (*a*) Children made Lincoln books in February. Lincoln jingles appeared in February newspaper.
   (*b*) History work in March centered around the "Settlement of Marietta."
   The March newspaper contained the account of the journey to the Ohio country.
   (*c*) Pioneer life in Marietta formed the basis of the History work in April. Imaginary letters from the early settlers of Marietta to their friends in the east appeared in the April issue.
7. Need for technical work in English and spelling felt in order that this work might appear in proper form in accordance with the requirements of a good paper.

IX. Feelings, Attitudes, and New View Points Developed.
1. Co-operation.
   All working together for a common purpose.
2. Responsibility.
   The best effort of every member of the group required to make the paper a success and to make each issue better than the last.
3. Good judgment.
   (*a*) In selection of material for contribution.
   (*b*) In criticism of contributions of other members of the group.
4. Service.
   Through the newspaper the children attempt to pass on to others some of the things from which they derived pleasure during the month.
5. The newspaper makes a connecting link between the school and the home and strengthens the bond between the two.
6. Gives the teacher a very effective way of getting certain needs and certain ideas "across" to the parents.
7. Gives the parent an opportunity to compare his child's efforts with the work of other children in his group. Reveals individual needs. Parent becomes conscious of child's strong points and of his weak points, and works with teacher to overcome difficulties.

BREEZY BITS FROM PORTABLE FOUR

(Excerpts from the paper)

Our slogan: Just the best that you can do,
Is the service asked of you.

REPORT ON TARDINESS BY ALEXANDER GINN

April 21. There has been no tardiness in Portable Four so far in April. If Donald Bowes helps we think we will have a good record.

April 22. Donald Bowes was late twice today.

A LETTER OF THANKS

The children in Portable Four gave Mr. McLane a copy of their March newspaper. The same day that he received his newspaper, he wrote the children a letter of thanks. They enjoyed his letter very much.

OUR HEALTH CHART

We have a Health Chart. We have pic-

tures of Health Chores on the sides of the chart. The names of all the children are on the chart. When we do all the Health Chores for a week, Miss Kingsborough puts a flag after our names. Some of the children have flags after their names. How would you like to have a flag after your name? I would like to have a flag after my name because I am a good American and the good American tries to gain and keep perfect health.—*Ruthbelle Stone*

THE PARROT

On Friday, April 8, Miss Hughes came into Portable Four and brought a parrot. The parrot was very funny. It whistled and it said, hello and no and yes and polly. The children sang a song named "Polly's Bonnet" and the parrot sang too.

HOSTESS FOR THE KING'S HERALD

Ellen Duff was hostess for the King's Herald on April 9. She served ice cream and cookies. Among the guests present were Robert Campbell, Charles Flarida and Leslie Dole from Portable Four. They had a very nice time.

TWO GREAT EYES

One night when Jane Summers was in bed, she saw two great, big eyes. Jane's kitty had jumped up on her dresser and sat on it. Jane called her mother. Her mother came and took Mr. Pussy down and then Jane went to sleep.

A WHITE KITTEN

On Saturday, April 9, Jane Johnson got a kitty. The kitty is white with gray spots. It can stand on its hind legs. It sleeps in a basket under the kitchen table.

A SUNDAY CONCERT

On Sunday, April 10, Dorothy Allan had company. Dorothy planned a concert. Dorothy's father played a piece on the piano. Everybody had a good time.

REPORTED BY GERTRUDE HALL

On Wednesday, April 13, Gertrude Hall went to the Heights Theater. She saw the Top of the World. The part she liked best was canning fish by machinery.

On Saturday, April 16, Gertrude went to the Art Museum. She saw Alice in Wonderland. There were dolls in the show with strings tied on them so they could walk. Some ladies talked for the dolls.

WAITING FOR A WARM DAY

The children in Portable Four had two spelling tests from the Indiana Spelling List. Mildred Batchelor stood one hundred in both tests. She told her mother she stood one hundred and that her paper was almost as pretty as Ravella Leonard's. Mildred's mother was very much pleased and she said Mildred could wear socks when the next warm day comes.

THE PAINTED TERRAPIN

On April 15, Miss Hughes brought a turtle into Portable Four. It crawled along Miss Kingsborough's desk. Miss Hughes tried to make it turn around so the children could see its back leg. It was a stubborn little thing. It turned right around and walked forward. Miss Hughes turned it over on its back. The turtle tried to turn over but it couldn't. It was called a painted terrapin. It had thirteen squares on its back. It was two years old.

CLEAN-UP WEEK

April 16 to April 23 was Clean-Up Week. Some children in Portable Four saw brooms with clothes tied around the ends on the telephone poles. Signs on the brooms said, "Clean-Up."

The children in Portable Four celebrated Clean-Up Week by cleaning their desks and by washing the finger marks off the glass on the bookcase.

John Schreiner and Jane Lewis dusted the rugs on all the chairs in Portable Four.

Jack Crilly washed all the window sills and Gertrude Hall washed the tops of all the desks.

OUTSIDE READING

Jack Crilly is reading a very interesting book. It is called *Arabian Nights.*

Dorothy MacDonald is reading Grimm's *Fairy Tales.* She likes the story of Faithful John.

Jean Horton is reading *The Little Princess* by Frances Hodgson Burnett. She enjoys it very much.

Jane Lewis is reading a book called *In the Court of King Arthur.*

Robert Lewis thinks the boys and girls would enjoy the book he is reading. It is called *Under the Lilacs.*

SEEING EVERYTHING IN JAPAN

Andrew Eken says he is going to see everything in Japan and a great deal in China and Korea. We think he will have many interesting things to tell us when he comes back.

ON THE BLACKBOARD IN PORTABLE FOUR

Miss Kingsborough has the words, "Courtesy," "Good Judgment," "Responsibility" and "Co-operation" written on the blackboard. The boys and girls look at these words and they try to mind them. The children try to be polite. They try to do the right thing at the right time. They try to take care of themselves. The boys and girls try to work together and help each other.—*David Howatt.*

A SPEED TEST

The boys and girls in Portable Four are going to have a race on the multiplication tables. They have a big yellow sheet on which they will write down one hundred and twenty answers. They will have seven minutes for the race. They are going to invite their mothers to the speed test.

ROLLING DOWN HILL

On April 3, Deborah Cleaveland's mother took Deborah and her brother and sister over to Rockeferrer's. Deborah and her brother and sister rolled down a great, big hill. They picked spring beauties and dog tooth violets and yellow violets. They had cookies and crackers and Forbes chocolate to eat. Deborah had a very nice time.

SECOND GRADE ASKS THIRD GRADE TO CRITICIZE

On April 22, Mary Ellen Finfrock from Miss Henderson's came to Portable Four and read the children a story called "The Honest Woodman." After she got through she asked the children to criticize the way she read it. The children thought that she read it beautifully. They told her that she could improve by looking off her book.

AT ADELBERT GYMNASIUM

On Saturday, April 23, the boys and girls in Portable Four went to the Adelbert Gymnasium. They did a dance called "The Romans and the English." When it came time for the children to fall down, all the people laughed and clapped. Four girls had their pictures taken. Their names were Jane Lewis, Ellen Duff, Ravella Leonard and Helen Born. They were in the pulling position. The pictures are going to be in the *Plain Dealer.*

INTERESTING REPORTS

On Monday, April 25, Miss Dysinger brought the boys and girls in her room over to Portable Four. Miss Dysinger's children gave reports on ants, bees, lions and snakes. The boys and girls in both classes asked questions. Some of the questions were very difficult to answer. William Hyde knew a great deal about snakes. He brought some rattles from a rattlesnake. These are the children who gave the reports:

Jean Mellen	Ruth Beebower
Robert Mellen	William Hyde

A WALK IN THE WOODS

On Tuesday, April 26, Miss Harmon took the children out for a walk in the woods. When they went a little way they came to a pond. Miss Harmon said there were frogs in the pond. We have read about frogs and we know that frogs come from tadpoles. The tadpoles come from frog's eggs. The tadpole pushes his arms through his skin. By and by his tail is gone and then he is Brother Green Coat.—*Junior Deming.*

A PIONEER EXHIBIT

The boys and girls in Portable Four are going to have a Pioneer Exhibit. They are going to make things out of wood, paper, plasticine, clay and soap. Junior Deming brought two bears made out of soap. His mother ordered the soap on purpose for Junior to make different kinds of animals. Junior's father helped Junior make the bears and the whole family offered suggestions.

STUART'S WAGON

Stuart George made a wagon out of wood. It is a covered wagon like the pioneers' wagons.

ROBERT LEWIS' WAGON

Robert Lewis made a covered wagon like the pioneers' wagons. Miss Reed said the horse could be a little fatter. Robert said his horse was not going to the Ohio Country. It was coming back from the Ohio Country and that was why it was so thin. Robert is going to make a banner. It is going to say on it, "I have been to the Ohio Country."

The people in the east began to get jealous because so many of their best people went to Ohio so they made two pictures. One was a well dressed man riding a fat horse. He had a banner and it said, "I am going to the Ohio Country." Then they made another picture of a man riding a wreck of a horse. He wore shabby clothes. He carried a banner and it said, "I have been to the Ohio Country."

3A'S THANK 4A'S

Miss Barber's class made a set of arithmetic cards for the boys and girls in Portable Four. They made forty cards. There are four examples on each card. We like the cards very much. We thank Miss Barber and her children for making them for us.

HALF ASLEEP

The other night the telephone rang. A little girl's mother jumped and grabbed the clock. She said, "Hello, hello." Then she answered the telephone and took the clock with her. Pretty soon she dropped the clock. She was half asleep.

SKIPPING A ROOM

A little boy named Lawrence once skipped a grade in school. When he came home he told his mother that he had skipped a room. A few days later Lawrence's mother saw his brother Raymond skipping across the room. She asked him why he was doing that. Raymond said he was doing just what Lawrence did.

MORT'S DOG AT SCHOOL

One day, Mort's dog went to school. The dog could not get in. Pretty soon a little boy went into the school. He did not shut the door and the dog went into the school. The children were having arithmetic. The dog went up to Mort and licked his slate.

The teacher said, "Mort Crowell, you take that dog home."

Mort took the dog home and locked him up in the corn bin. Then he went to school again. When Mort's grandpa went to get the corn the dog got out and went to school again. He went up to Mort and the boys and girls began to laugh.

The teacher said, "Mort Crowell, you take your dog home, and you stay with him."

LETTERS FROM THE EARLY SETTLERS OF MARIETTA TO THEIR FRIENDS IN THE EAST

Marietta, O.,
Sept. 9, 1788.

Dear Cornelius,

I am going to tell you why I left my home in Danvers and came to Ohio.

One day as I was going out to plant my corn, my little son said, "Oh, father, please let me go with you."

He took his rake and spade and we both were very busy. What do you think happened? I heard a familiar sound. I turned around and saw my son crying.

I said, "What is the matter, my son?"

He said, "The soil is so rocky that I can't get enough dirt to cover my corn."

I decided it was time for me to move to a place where there was enough dirt to cover my corn.

Yours truly,
JANE SUMMERS.

Marietta, O.,
Aug. 30, 1789.

Dear Phineas,

We heard a great deal about the Ohio country, and I find that all I heard about the rich soil is true, for here the tallest settler has to stand on his tip toes to pull an ear of corn. When we were back in Danvers we had to kneel down to pluck the corn.

We had great trouble with the buckwheat for the crows were determined to devour it. We had to watch it all day long. The rabbits and the squirrels were pests too.

Yours truly,
ELLEN DUFF.

Marietta, O.,
Aug. 18, 1788.

Dear Reuben,

We like Ohio very much. The crops grew very well during the spring and summer. One bad thing was that there were so many trees. Some of the trees we cut down with our axes and others we deadened by girdling them.

We have plenty of game. There are many rabbits here. There are lots of fish in the streams.

Your friend,
RUSSELL MOODY.

Marietta, O.
June 15, 1789.

Dear Frederick,

I used to think I was brave but now since I came to the Ohio country, I don't think I am so brave. There are wolves and terrible snakes here.

One time when I was coming home at sunset, a pack of hungry wolves followed me. I climbed a tree and spent the night there.

In the morning when I was ready to go home, I saw a calf that the wolves had devoured for their breakfast.

One night my friend was bitten by a copper head snake when he was asleep.

You are not even safe to walk around your cabin because you might find a snake coiled right up in your path. I wish you were here to help me fight these terrible foes.

Yours truly,
JANE LEWIS.

HAZEL KINGSBOROUGH
Cleveland Heights, Ohio

THE READER'S GUIDE

SIGNIFICANT ARTICLES

THE WAITING NICHE

A writer in the *Virginia Teacher* for July, Professor L. R. Drown, wants a philosopher to define the project method. He read the *Twentieth Year-Book*, attended the Atlantic City meeting of the National Society for the Study of Education, has surveyed some of the current books on the subject, and finds himself dissatisfied with the way things are going.

In the first place he wonders what is to become of the excellent work that has been done on the minimum (or is it minimal?) essentials of the course of study. This was tending toward the building up of a science of education. But some of the advocates of what they call project-teaching appear to seek equivalents for essentials in "amorphous immediate experience simply because the latter has firm grasp upon the attention."

Again, there is difficulty in the matter of subject-matter vs. method. Some enthusiasts declare the project is both. They appear, however, either not to know or to ignore the principles set forth by Dr. Dewey, who has shown how the two, subject-matter and method, are unified. They evade the responsibility of either using or replacing the substantial body of methods and philosophy already built up. As a result, teachers, with no criteria agreed upon, feel free to call any sort of exercise which appeals to them a project.

We must choose a philosopher, says the writer, and apply consistently the principles which he works out. The basis is already laid in the definition of Professor Kilpatrick, "a unit of whole-hearted, purposeful activity proceeding in a social environment." The problem now is, What worth-while modifications of present practice may this idea foster? These will relate to (1) the nature of purpose, (2) the laws of learning, (3) the curriculum as providing for activity and complete acts, (4) general discipline, and (5) desirable results in knowledge, skills, habits, attitudes, and ideals, measured by such objective devices as we have or can develop. All this will require considerable time. After ten or twenty years we may wisely take account of progress and shall no doubt be able to justify the project method.

STANDARDS OF TEACHING ABILITY

"Standards of Teaching Ability," a brief though highly suggestive article on the judgment of teaching ability, appears in the *Educational Review* for October from the pen of Stuart A. Courtis, Director of Instruction, Teacher Training, and Research for the public schools of Detroit. Mr. Courtis believes that at present our ignorance on the subject of what constitutes teaching ability is very great. We know very little, for example, as to whether sympathy or the lack of it will produce the best results in terms of rigidity of discipline. We must first define teaching ability wholly in terms of the changes to be produced in children; second, we must formulate standard tests for measurement of these changes; third, we must institute careful control studies of the relation between special qualities in teachers, nature of materials used, methods of use, etc., and how these qualities may be developed; last, we must devise tests for the selection of the capable and the elimination of the unfit among those

who wish to enter training classes. Already some progress has been made with regard to certain aspects of teaching as, for example, drills in arithmetic. Even here, however, the larger ideals involved were not measured by the tests used. At present there is little correlation between teaching ability and scores in standard tests.

CRITERIA FOR CHOOSING TESTS

A definite outline of criteria for choosing tests was presented in the October number of the *Journal of Educational Psychology* by Raymond Franzen and F. B. Knight. Discarding inexact and irrelevant considerations a test, they say, may to a varying degree:

1. Measure what it purports to measure.
2. Yield the same diagnoses tomorrow that it does today.
3. Yield the same diagnosis in the hands of one examiner that it does in another.
4. Yield numerical diagnoses the units of which are equal.
5. Mean nothing at all by the zero of its scale.
6. Provide standards by which comparisons may be made to large numbers of any one grade and of any one age.
7. Interest the child.
8. Register a wide range of abilities.
9. Distinguish between failures, so that we can tell *why* a child has a low score as well as THAT he has a low score.
10. Correlate to unity with intelligence when the abilities measured are at their maximum.

The author's comments on these criteria are very suggestive. Supervisors will find the article as a whole well worth reading.

THE MEASUREMENT OF EFFICIENCY IN TEACHING

A paper read at a meeting of the secondary education department of the Minnesota State Teachers Association on "The Measurement of Teaching Efficiency" by Professor J. B. Sears, of Leland Stanford University, occupies the post of honor in the *Journal of Educational Research* for September. After a somewhat lengthy theoretical discussion the writer comes to a consideration of the next step. This appears to be a complex one. We should exclude from teacher-training institutions those who will never make good teachers—after we learn how to distinguish them. Then we must measure the actual progress the teacher in training makes. Next we must devise a test to determine the probable success of an applicant for a teaching position. The other factors relate to measuring the efficiency of teachers in service, of teaching and supervisory processes, and of self-measurement by teachers. Criteria for formulating the needed tests are offered, the probable relations between factors in general merit considered, and the whole fortified with a bibliography of fifty-five titles.

NEW METHODS IN ARITHMETIC

The scholar who can on occasion be also a popular expositor is as useful as he is rare. What he says is clear as well as true and wise. Professor E. L. Thorndike is a marked example of the type. His recent volume for teachers and would-be teachers of arithmetic [1] reflects his long-continued study of the subject but carries its burden of learning lightly.

Those for whom it was written will find it exceedingly stimulating and helpful. There is no long preamble; the writer says at once, "The older methods taught arithmetic for arithmetic's sake, regardless of the needs of life. The newer methods emphasize the processes which life will require and the problems which life will offer." Then follow at once concrete illustrations of the differences between the old and the

[1] *The New Methods in Arithmetic.* By Edward Lee Thorndike. Chicago: Rand, McNally & Co., 1921.

new, differences in the sort of computation required, the genuineness of the problems set, and the relation of arithmetic to real life.

Next comes a discussion of children's interests in arithmetic and how they may be conserved. Good texts will use simple words and they will avoid useless tasks, such as the copying of numbers. The teacher will see that definite attainable goals are set up and that no time is wasted upon stupid or blundering problems.

The chapter on "Habit Formation and Drill" gives opportunity for the application of the fundamental laws of learning. The "Law of Exercise" and the "Law of Effect" are related to numerous examples of specific bonds or habits to be formed. Concrete suggestions are given also as to the amount and distribution of practice.

So through the thirteen chapters of the book, in direct unconventional fashion, Professor Thorndike presents and embodies in concrete examples the best advice on teaching arithmetic which has been offered for many a day. The concrete illustrations are the most striking feature of the book. More than half the space is devoted to them; and to make doubly sure that the reader thinks as well as reads the author has appended to each chapter numerous exercises. These fit the book for use in normal schools and in study classes for teachers in service. Naturally there is no bibliography. The students for whom it is mainly intended require not a comparative view of what many authorities say but a firm and ready grasp upon what one dependable authority says.

The fact that he presents the theories he has already embodied in a series of texts makes it possible to see how Professor Thorndike's ideas on the teaching of arithmetic may be applied in detail in the work of the schools. Those who have worked with the series will welcome the handbook of methods as a guide to the more effective use of the texts. But no one who cares in the least about eliminating the useless and the merely formal or stupid from the arithmetic courses of the schools and finding methods of teaching what remains in accordance with the actual psychology of the subject can fail to be gratified that so able a champion has enlisted in the cause.

THE NEW BOOKS

How to Study Music. By Charles H. Farnsworth. New York: Macmillan Co., 1920. Pp. xvii + 294.

The problems of music teaching presented under the guise of a series of conversations carried on in the home.

Teaching Geography by Problems. By E. Erlich Smith. Garden City, N. Y.: Doubleday, Page & Co., 1921. Pp. xix + 306.

A discussion of the method of problems followed by a number of illustrations of actual classroom work. Suggestive for those seeking new avenues of approach to geography.

Teaching the New Geography. By Wallace W. Atwood and Helen Goss Thomas. Boston: Ginn & Co., 1921. Pp. 203. $0.80.

A manual primarily for use with the Frye-Atwood Geographical Series.

Essentials of Geography. By Albert Perry Brigham and Charles T. McFarlane. New York: American Book Co., 1921. Pp. viii + 198.

A manual for teachers by the authors of a popular series bearing the same title.

The Principles of Language-Study. By Harold E. Palmer. Yonkers-on-Hudson, N. Y.: World Book Co., 1921. Pp. 186.

From the point of view of the spoken language. The basis is said to be a series of nine psychological principles.

Selected Stories from Kipling. Edited by William Lyon Phelps. Garden City,

N. Y.: Doubleday, Page & Co., 1921. Pp. xiv + 355.

Thirteen stories that high school teachers will be glad to use in this new and convenient form.

Word Finder. By Hubert V. Coryell and Henry W. Holmes. Yonkers-on-Hudson, N. Y.: World Book Co., 1921. Pp. viii + 150.

A spelling-dictionary to enable a pupil in the elementary school to look up quickly the spelling of a word he wishes to use.

The American Public School. By Ross L. Finney. New York: Macmillan Co., 1921. Pp. xiv + 335.

A history of American education written for normal school students.

State Maintenance for Teachers in Training. By Walter Scott Hertzog. Baltimore, Md.: Warwick & York, 1921. Pp. 144.

An investigation of the principles involved in the making of subsidies to prospective teachers.

Child Welfare. By Nora Milnes. New York: E. P. Dutton, 1921. Pp. 243.

From the social point of view by the director of the Edinburgh School of Social Study.

Mental Development and Education. By M. V. O'Shea. New York: Macmillan Co., 1921. Pp. xvii + 403.

Principles of teaching based on natural laws of human development. Intended as a textbook for teachers in training.

Right Royal. By John Masefield. New York: Macmillan Co., 1920.

A long narrative poem on cross-country racing in England.

Stories of the Day's Work. By Roy Davis and Frederick G. Getchell. Boston: Ginn & Co., 1921. Pp. 318.

Selections from American authors, chosen with a view to arousing interest on the part of older boys and girls in various occupations and developing respect for honest toil.

Uncle Zeb and His Friends. By Edward W. Frentz. Boston: Adantic Monthly Press. Pp. 224.

A series of incidents, mainly concerned with animals, as told by "Uncle Zeb."

IN PAPER COVERS

Mathematics for the Seventh School Year. By Raleigh Schorling and John R. Clark.

An experimental edition published by the authors, instructors in the Lincoln School of Teachers College, New York City.

Wilkins Prognosis Test in Modern Languages. By Lawrence A. Wilkins. Yonkers-on-Hudson, N. Y.: World Book Co. Specimen set, 10 cents postpaid.

Report of the Division of Educational Tests for 1919–20. By Walter S. Monroe. Bulletin No. 5, Bureau of Educational Research, University of Illinois. 25 cents.

Courtis Standard Practice Tests in Handwriting. By S. A. Courtis and Lena A. Shaw. Yonkers-on-Hudson, N. Y.: World Book Co., 1921. Specimen set, 50 cents postpaid.

Syllabus in the Philosophy of Education. With Questions for Discussion, Reading References, and Topics for Papers. By William H. Kilpatrick. Published by Teachers College, Columbia University.

University High School Journal, Vol. II.

An English number of a periodical published at the University of California. Contains a complete course in English for the high school.

Getting Out the High School Paper. By Clara C. Ewalt.

A bulletin issued by the Cleveland School of Education.

A Scale for Measuring Habits of Good Citizenship. By Siegfried M. Upton and Clara F. Chassell. Teachers College, Bureau of Publications, New York.

Bibliography of Tests for Use in Schools. Yonkers-on-Hudson, N. Y.: World Book Co. Second edition, September, 1921. 294 titles. 10 cents.

Projects for the Elementary School. Series I to III. Sample materials for Kindergarten and Grades One to Three, Grades Four to Six, and Junior and Senior High School. Extension Department, State University of New Jersey, New Brunswick, N. J. 25 cents each.